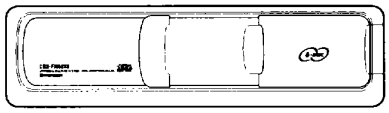
PIONEER
The Art of Entertainment

Service Manual

CDX-FM623S/UC



ORDER NO.
CRT1859

UNIVERSAL MULTI-CD SYSTEM

CDX-FM623S UC,ES,GB

COMPACT disc DIGITAL AUDIO

- **See the separate manual CX-652(CRT1857) for the CD mechanism description, disassembly and circuit description.**
- **The CD mechanism employed in this model is one of CX-652 series.**
- **Use the same display assy as used for CDX-FM63.**

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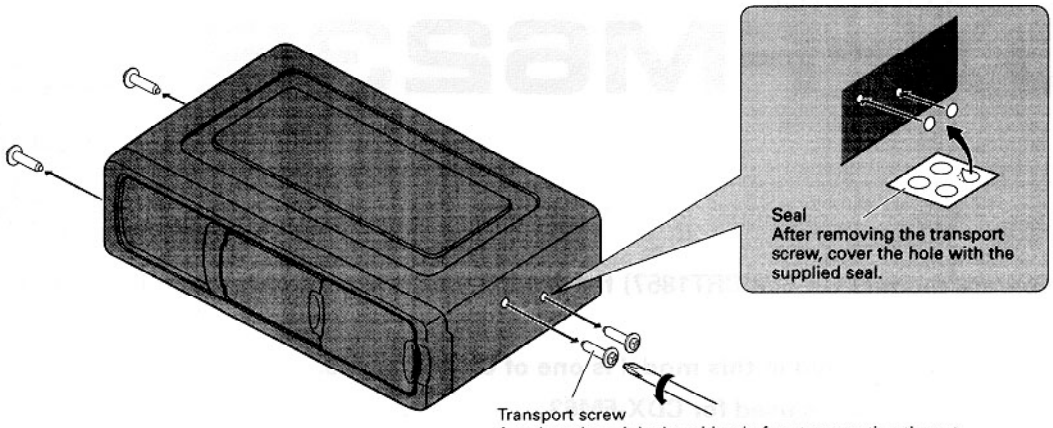
● CD Player Service Precautions

1. For pickup unit(Service)(CXX1235) handling, please refer to"Disassembly"(CX-652 Service Manual CRT1857).
   During replacement, handling precautions shall be taken to prevent an electrostatic discharge(protection by a short pin).
2. During disassembly, be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.
3. Please checking the grating after changing the pick up unit (See page 8).
4. Since these screws protects the mechanism during transport, be sure to affix it when it is transported for repair, etc.


Seal
After removing the transport screw, cover the hole with the supplied seal.
Transport screw
Attach to the original position before transporting the set.

A transport screw has been attached to the set in order to protect it during transportation. After removing the transport screw, cover the hole with the supplied seal.
Be sure to remove the transport screw before mounting the set. The removed transport screws should be retained in the accessory bag for use the next time the set is transported.

1. SAFETY INFORMATION

1.1 CDX-FM623S/UC

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.
If you are not qualified to perform the repair of this product properly and safely; you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

1.2 CDX-FM623S/GB

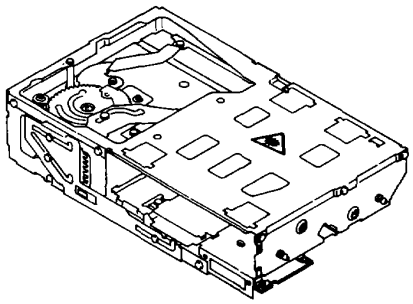
1. **Safety Precautions for those who Service this Unit.**
- **Follow the adjustment steps (see pages 8 through 12)in the service manual when servicing this unit. When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.**

Caution:

1. **During repair or tests, minimum distance of 13cm from the focus lens must be kept.**
2. **During repair or tests, do not view laser beam for 10 seconds or longer.**

2. **A "CLASS 1 LASER PRODUCT" label is affixed to the rear of the player.**

3. **The triangular label is attached to the mechanism unit frame.**



4. **Specifications of Laser Diode**

Specifications of laser radiation fields to which human access is possible during service.
Wavelength = 800 nanometers

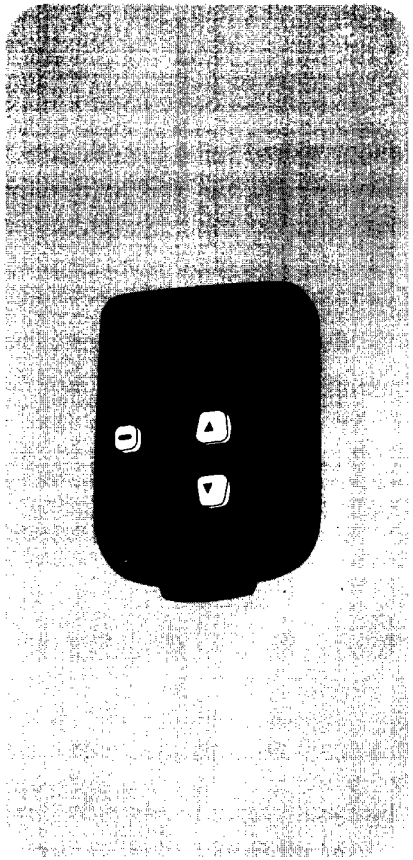
2. SPECIFICATIONS

CD Player unit
System ..... Compact disc audio system
Usable discs ..... Compact Disc
Signal format
..... Sampling frequency: 44.1 kHz
Number of quantization bits: 16; linear
Power source
..... 14.4 V DC (10.8 — 15.1 V allowable)
Max. current consumption ..... 1.0 A
Weight ..... 1.8 kg (4.0 lbs)
Dimensions
..... 248 (W) x 66 (H) x 158 (D) mm
[9-3/4 (W) x 2-5/8 (H) x 6-1/4 (D) in]
FM modulator usable frequency
..... 87.9/88.1/88.3/88.5/88.7/88.9/89.1
/89.3/89.5/89.7/89.9/90.1 MHz

Antenna Switching unit
Weight ..... 140 g (0.3 lbs)
Dimensions
..... 45 (W) x 25 (H) x 43 (D) mm
[1-3/4 (W) x 1 (H) x 1-5/8 (D) in]

Controller unit
Weight ..... 70 g (0.11 lbs)
Dimensions
.....55 (W) x 81 (H) x 20 (D) mm
[2-1/8 (W) x 3-1/4 (H) x 7/8 (D) in]

Note:
Specifications and the design are subject to possible modification without prior notice due to improvements.



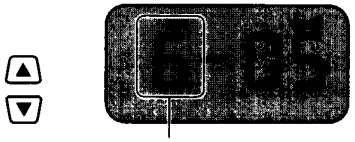
Start the CD player

1. Switch the radio on and tune to Modulating Frequencies.

- The initial value is 89.1 MHz.
- If your radio does not have muting, there may be some noise before power switch of control unit is ON. If this happens, turn down the volume of the radio.

2. Press button to switch on and start the player.

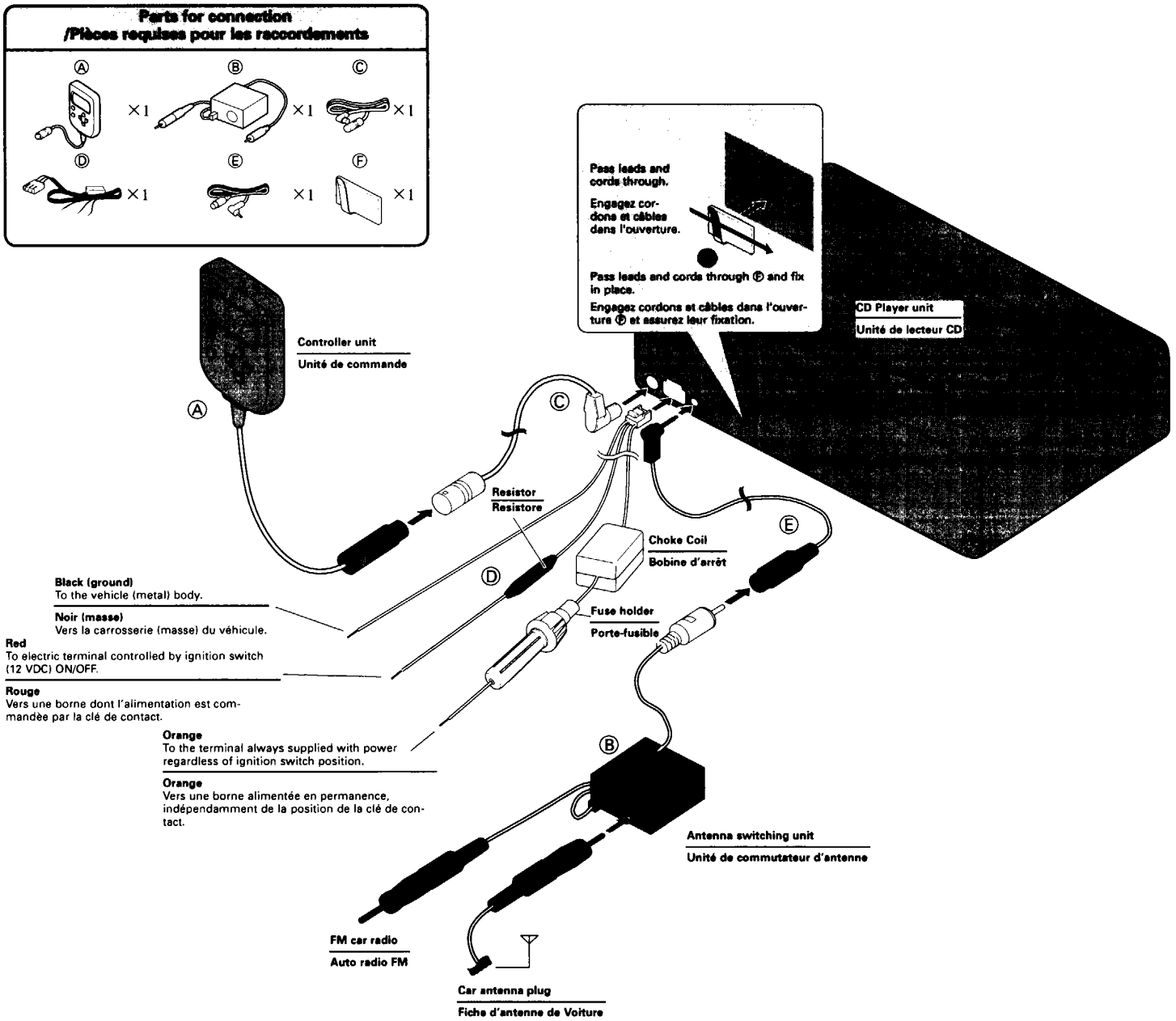
Disc Number Search



Disc Number

: increase the number.

: decrease the number.


Parts for connection
/Pièces requises pour les raccordements
Ⓐ
Ⓑ
Ⓒ
×1
×1
×1
Ⓓ
Ⓔ
Ⓕ
×1
×1
×1
Pass leads and cords through.
Engagez cordons et câbles dans l'ouverture.
Pass leads and cords through Ⓕ and fix in place.
Engagez cordons et câbles dans l'ouverture Ⓕ et assurez leur fixation.
CD Player unit
Unité de lecteur CD
Controller unit
Unité de commande
Ⓐ
Ⓒ
Resistor
Resistore
Choke Coil
Bobine d'arrêt
Ⓔ
Ⓓ
Black (ground)
To the vehicle (metal) body.
Noir (masse)
Vers la carrosserie (masse) du véhicule.
Fuse holder
Porte-fusible
Red
To electric terminal controlled by ignition switch (12 VDC) ON/OFF.
Rouge
Vers une borne dont l'alimentation est commandée par la clé de contact.
Orange
To the terminal always supplied with power regardless of ignition switch position.
Orange
Vers une borne alimentée en permanence, indépendamment de la position de la clé de contact.
Ⓑ
Antenna switching unit
Unité de commutateur d'antenne
FM car radio
Auto radio FM
Car antenna plug
Fiche d'antenne de Voiture

4. DISASSEMBLY

● Removing the Upper Case

1.Remove the nine screws and then remove the upper case.

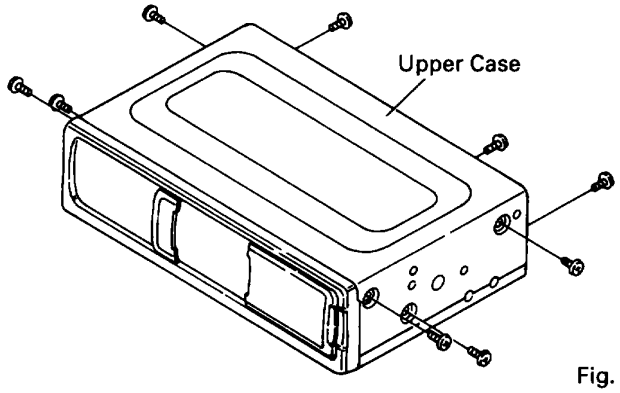


Fig. 1

● Removing the CD Mechanism Module

1.Remove the four dampers.
2.Remove the two springs.
3.Disconnect the connector and then remove the CD mechanism module.

● Removing the Grille Assy

1.Press the two tabs indicated by arrows and then pull out the grille assy.

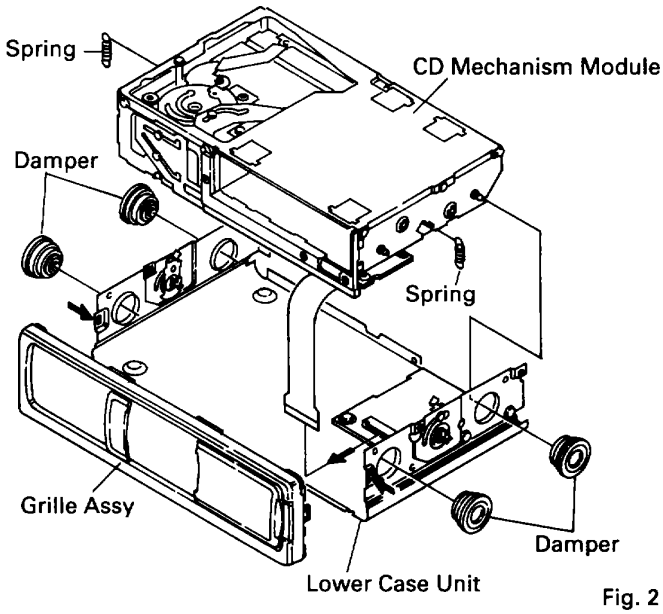


Fig. 2

● Removing the System Unit

1.Remove the two screws A and the screw B.
2.Stretch the claw indicated by arrow and then remove the system unit.

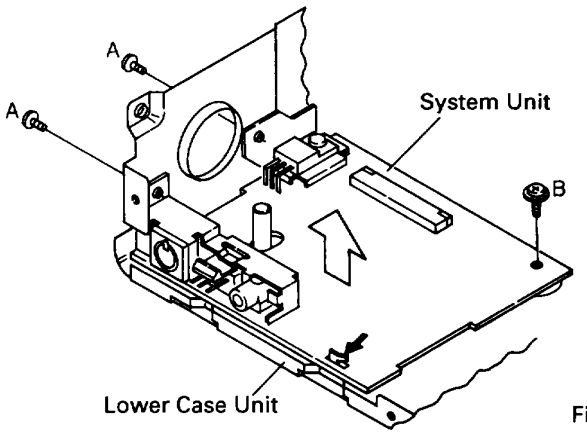


Fig. 3

5. ADJUSTMENT

5.1 MODULATOR ADJUSTMENT

● Connection Diagram

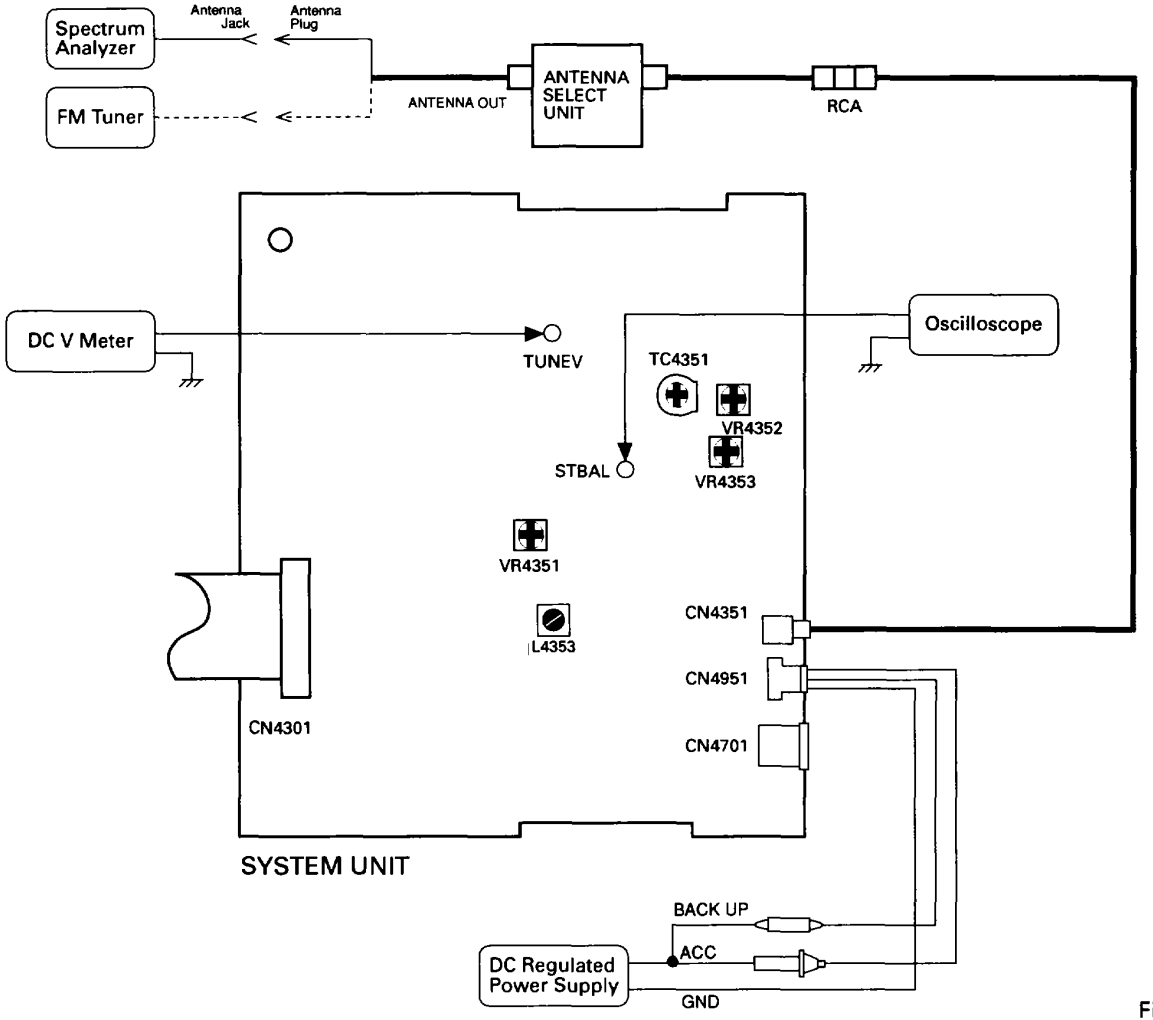


Fig.4

● Adjustment

	CD Output	Adjusting Point	Adjustment Method (Switch Position)
Tuning Voltage Adjustment	No signal	L4353	DC V Meter: 3.0V±0.1V
Balance Adjustment	No signal	VR4351	Oscilloscope: 38kHz signal becomes minimum
Modulation Adjustment	400Hz 0dB	VR4352	Spectrum Analyzer : 135±5kHz (Modulation Level : 7)
RF Level Adjustment	No signal	VR4353	Spectrum Analyzer: 70dBμV±5dB
Separation Adjustment	L channel 1kHz 0dB R channel No signal	TC4351	Signal leakage to the R-channel(crosstalk) becomes minimum. (Modulation Level : 1)

5.2 CHECKING THE GRATING

● Checking the Grating After Changing the PU Unit

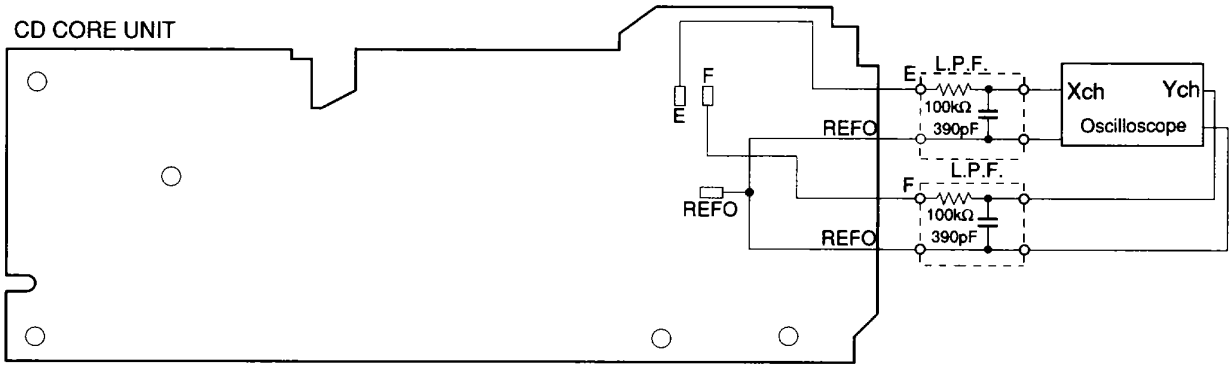
·**Note :**
Unlike previous CD mechanism modules the grating angle of the PU unit cannot be adjusted after the PU unit is changed. The PU unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted PU unit for the CD mechanism module. Changing the PU unit is thus best considered as a last resort. However, if the PU unit must be changed, the grating should be checked using the procedure below.

·**Purpose :**
To check that the grating is within an acceptable range.

·**Symptoms of Mal-adjustment :**
If the grating is off by a large amount symptoms such as being unable to close tracking, being unable to perform track search operations, or track searching taking a long time, may appear.

·**Method :**

·Measuring Equipment	·Oscilloscope, Two L.P.F.
·Measuring Points	·E, F, REFOUT
·Disc	·ABEX TCD-784
·Mode	·TEST MODE



·**Checking Procedure**
1. In test mode, load the disc and switch the 5V regulator on.
2. Using the **TRACK UP** and **TRACK DOWN** buttons, move the PU unit to the innermost track.
3. Press key **PAUSE** to close focus, the display should read "91".
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within 75° . Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than 75° try changing the PU unit to see if there is any improvement. If, after trying this a number of times, the grating angle does not become less than 75° then the mechanism should be judged to be at fault.

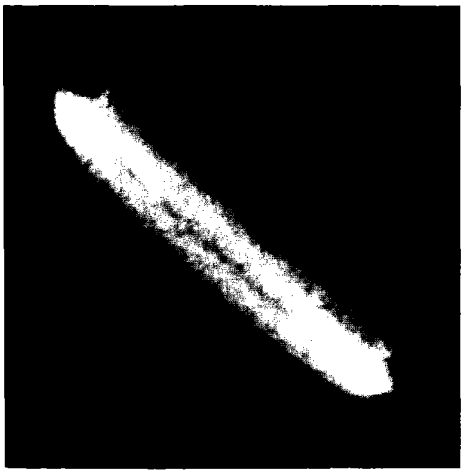
·**Note**
Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

·**Hint**
Reloading the disc changes the clamp position and may decrease the "wobble".

Grating waveform

Ech → Xch 20mV/div, AC
Fch → Ych 20mV/div, AC

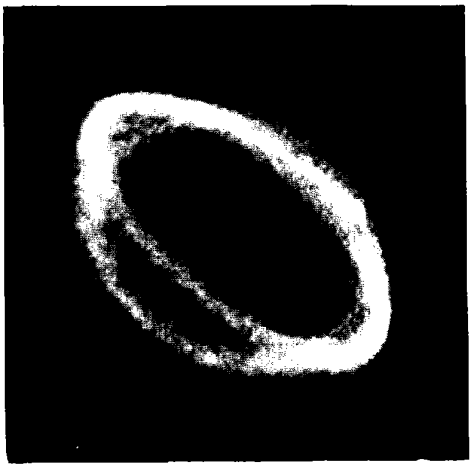
0°



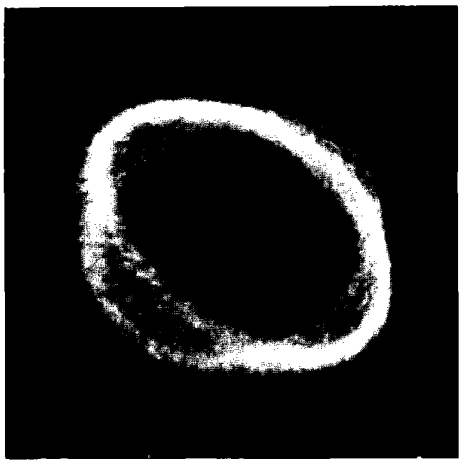
30°

45°

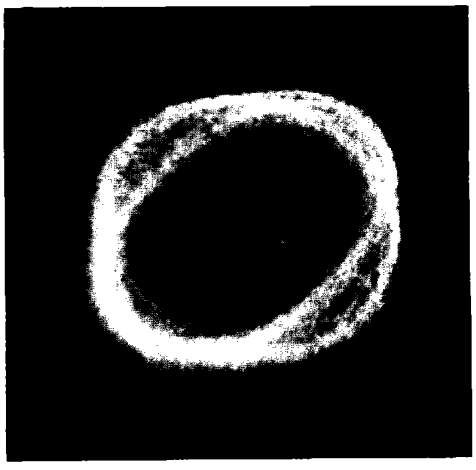
60°



75°



90°



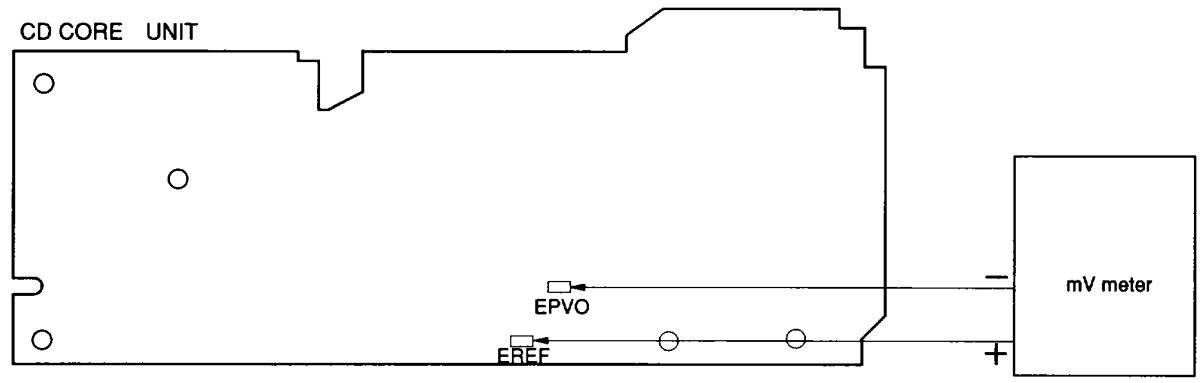
5.3 ADJUSTMENT OF ELEVATION WHEN THE CD CORE UNIT HAS BEEN REMOVED FOR MAINTENANCE

● **Adjustment when Error Code 60 is Displayed Because of Malfunctioning Elevation**

·**Note :**
Unlike the conventional mechanisms, the new mechanism detects the height of the stage using slide-variable resistance.
To absorb dislocation of the stage height caused by differences in the mechanism and the CD core unit, adjustment must be made for each CD-mechanism module using a variable resistor.
Normally, readjustment is not needed, as this has been adjusted at the factory. However, adjustment of elevation is required according to the procedure explained below if an elevation error has occurred or if the CD core unit has been removed.

·**Purpose :**
To adjust and confirm whether or not elevation operates correctly.

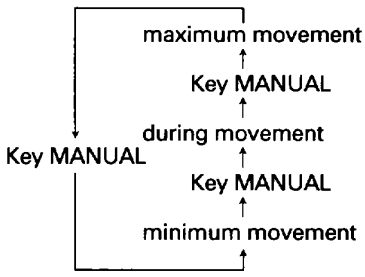
·**Adjustment Method :**
·Measuring Equipment: Millivoltmeter
·Measuring Points : EREF, EPVO
·Setting : Without a magazine in Test mode
With the mechanism placed upside-down (Place the CD mechanism module so that the CD core unit is above.)



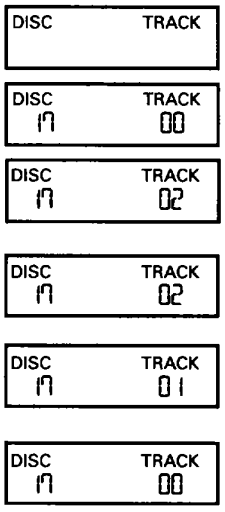
·**Confirmation Procedure**

1. Enter Test mode(1), then select Multi-CD player.
2. Press key **MODE** to enter Mechanism Test mode.
3. Press key **MANUAL** twice to specify the amount of movement.

The amount of movement changes each time key **MANUAL** is pressed.



Examples of display



Examples of display

4. Press key **PAUSE** to set ELV/TRAY mode to TRAY.

DISC	TRACK
01	12

5. Press key **TRACK UP** to release the clamp, and return the tray to the magazine.

Release the clamp

6. Press key **PAUSE** to enter Elevation Move mode.

DISC	TRACK
01	02

7. Use key **TRACK UP/TRACK DOWN** to operate elevation and set it to the graduation of the fourth step (Fig. 5).

8. Make the adjustment.
   Use VR802 to adjust the difference in potential between EREF and EPVO to 0 ±20 mV.

9. When adjustment is completed, press key **DISC UP** to exit Mechanism Test mode.

DISC	TRACK
0K	

10. Confirm operation of the mechanism.
    Place the mechanism horizontally (CD core unit below). Take care not to short-circuit the P.C.B.

11. Confirm the height of the stage. Use the DISC UP/DOWN key to select disc No.4.
    Check if the stopper bend of the clamp lever is engaged in the groove of the frame stopper (Fig. 6~8).

DISC	TRACK
04	

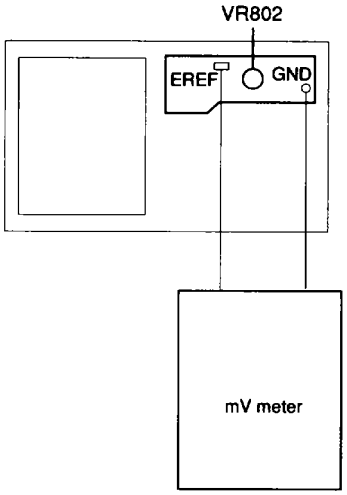
·**Note :**
The stopper bend will be pressed downward into the groove for final clamping. Confirm the engagement position of the stopper bend.
·If the stopper bend is engaged in the center and pressed downward, adjustment is completed. Go to step 15.
·If the stopper bend is dislocated, check the amount of dislocation by following steps 12 to 14.

12. To see the amount of dislocation, place the mechanism upside-down.
    If the stopper bend has been dislocated in the direction of the first CD, turn VR802 to the left(fig 6).

    To lower the stage toward the sixth step by 0.1 mm, reduce the voltage of EREF (adjusted in step 8) by 20 mV.

    If the stopper bend has been dislocated in the direction of the sixth CD, turn VR802 to the right(fig 8).

    To raise the stage toward the first step by 0.1 mm, increase the voltage of EREF (adjusted in step 8) by 20 mV.



13. Place the mechanism horizontal. Go back to step 11 to reconfirm the stage height.

14. When adjustment of the stage height is completed, proceed as follows:

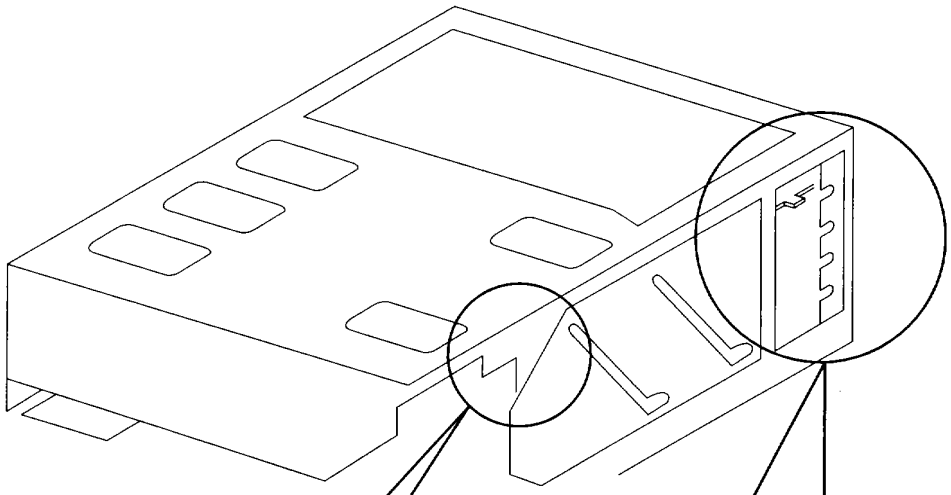
15. Press the **EJECT** switch.

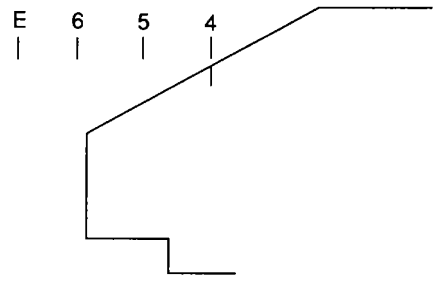
16. Once operation of the mechanism has stopped, turn the power OFF.

17. Wait more than one minute after the power is turned off, then turn the power ON and insert a magazine.

18. Check if the mechanism operates correctly with the first and fourth CDs.

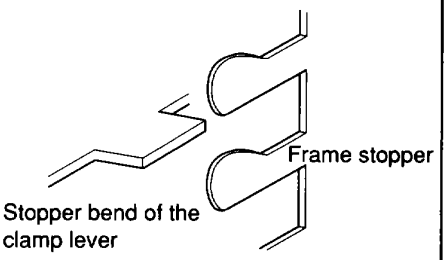
19. If the mechanism operates properly, adjustment is completed. If the mechanism operates improperly, make the adjustment again.



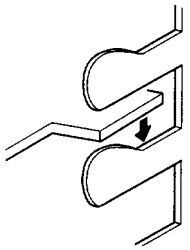


Adjust to the graduation of the fourth CD.

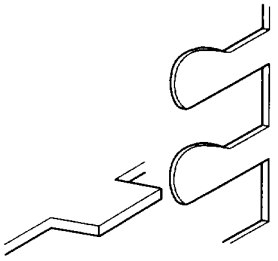
Fig. 5



Dislocated toward the first CD.
Fig. 6



Engaged in the center and pressed downward.
Fig. 7



Dislocated toward the sixth CD.
Fig. 8

6. TEST MODE

6.1 TEST MODE

1)Precautions

· This unit uses a single power supply (+5V) for the regulator. The signal reference potential, therefore, is connected to REFO(approx. 2.5V) instead of GND.
If REFO and GND are connected to each other by mistake during adjustments, not only will it be impossible to measure the potential correctly, but the servo will malfunction and a severe shock will be applied to the pick-up. To avoid this, take special note of the following.
Do not connect the negative probe of the measuring equipment to REFO and GND together. It is especially important not to connect the channel 1 negative probe of the oscilloscope to REFO with the channel 2 negative probe connected to GND.
Since the frame of the measuring instrument is usually at the same potential as the negative probe, change the frame of the measuring instrument to floating status.
If by accident REFO comes in contact with GND, immediately switch the regulator or power OFF.

· Always make sure the regulator is OFF when connecting and disconnecting the various filters and wiring required for measurements.

· Before proceeding to further adjustments and measurements after switching regulator ON, let the player run for about one minute to allow the circuits to stabilize.

· Since the protective systems in the unit's software are rendered inoperative in test mode, be very careful to avoid mechanical and /or electrical shocks to the system when making adjustment.

· Test mode(1) starting procedure
Pressing the POWER and RESET keys together.

· Test mode(2) starting procedure
Switch back-up ON and insert the disc while pressing the power key and switch ACC ON.

· Test mode cancellation
Switch ACC, back-up OFF or pressing the RESET key.

· Disc detection during loading and eject operations is performed by means of a photo transistor in this unit.Consequently, if the inside of the unit is exposed to a strong light source when the outer casing is removed for repairs or adjustment, the following malfunctions may occur.
*During PLAY, even if the eject button is pressed, the disc will not be ejected and the unit will remain in the PLAY mode.
*The unit will not load a disc.
When the unit malfunctions this way, either re-position the light source, move the unit or cover the photo transistor.

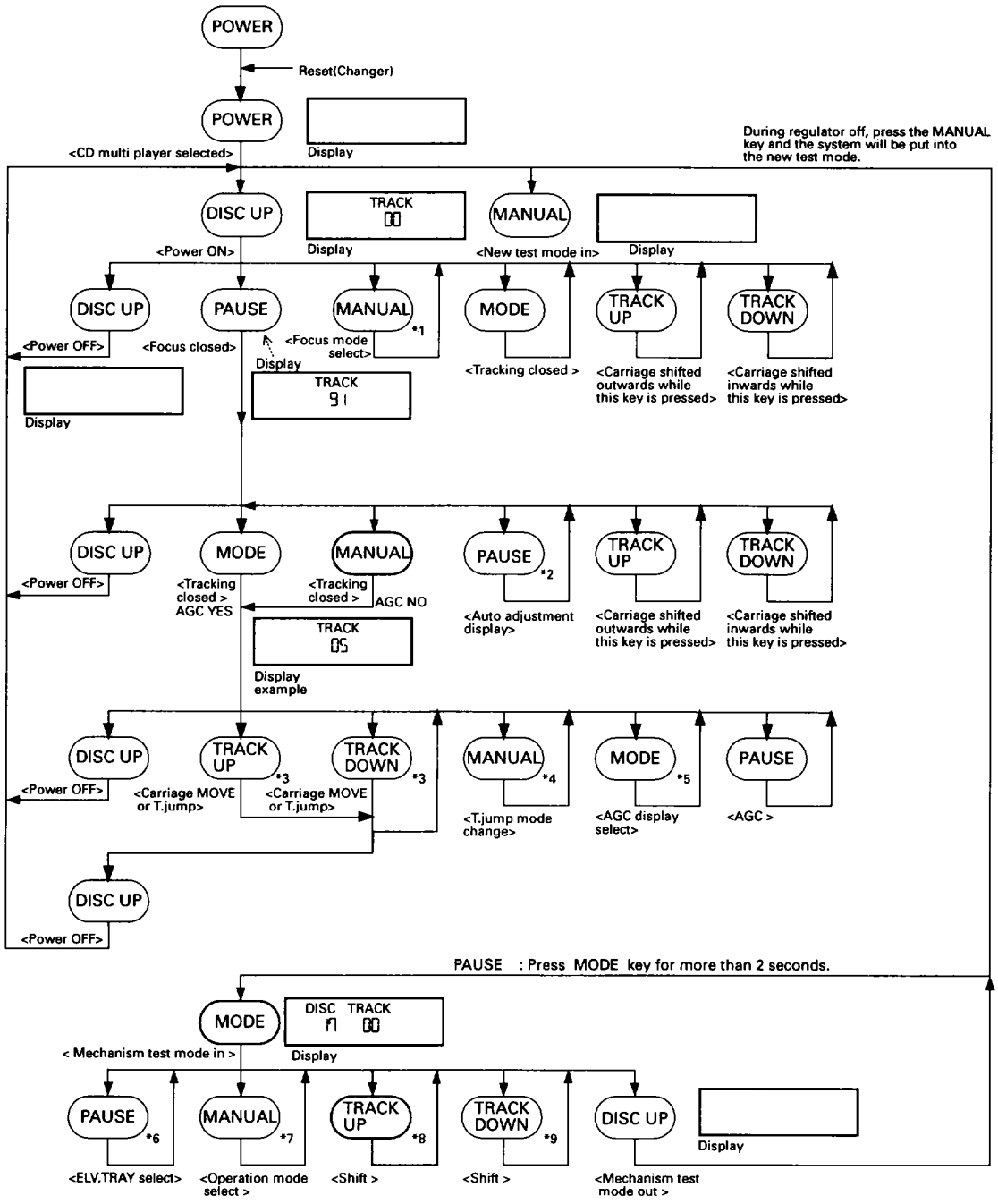
· When loading and unloading discs during adjustment procedures, always wait for the disc to be properly clamped or ejected before pressing another key. Otherwise, there is a risk of the actuator being destroyed.

· Turn power off when pressing the button TRACK UP+ or the button TRACK DOWN- key for focus search in the test mode. (Or else lens may stick and the actuator may be damaged.)

· SINGLE/4TRK/10TRK/32TRK will continue to operate even after the key is released.Tracking is closed the moment C-MOVE is released.

· JUMP MODE resets to SINGLE as soon as power is switched off.

● Test Mode (1) Flow Chart



*1 Normal focus close → S curve check → Focus EQ check
00 Display 01 02

*2 Normal display → Focus cancel → Tracking offset → Tracking balance (Close spindle-rough)

*3 100 TRK jump & carriage MOVE continue only while the keys are released

*4 SINGLE → 4TRK → 10TRK → 32TRK → 100TRK → C.MOVE

*5 Normal display → Focus gain → Tracking gain → Focus bias

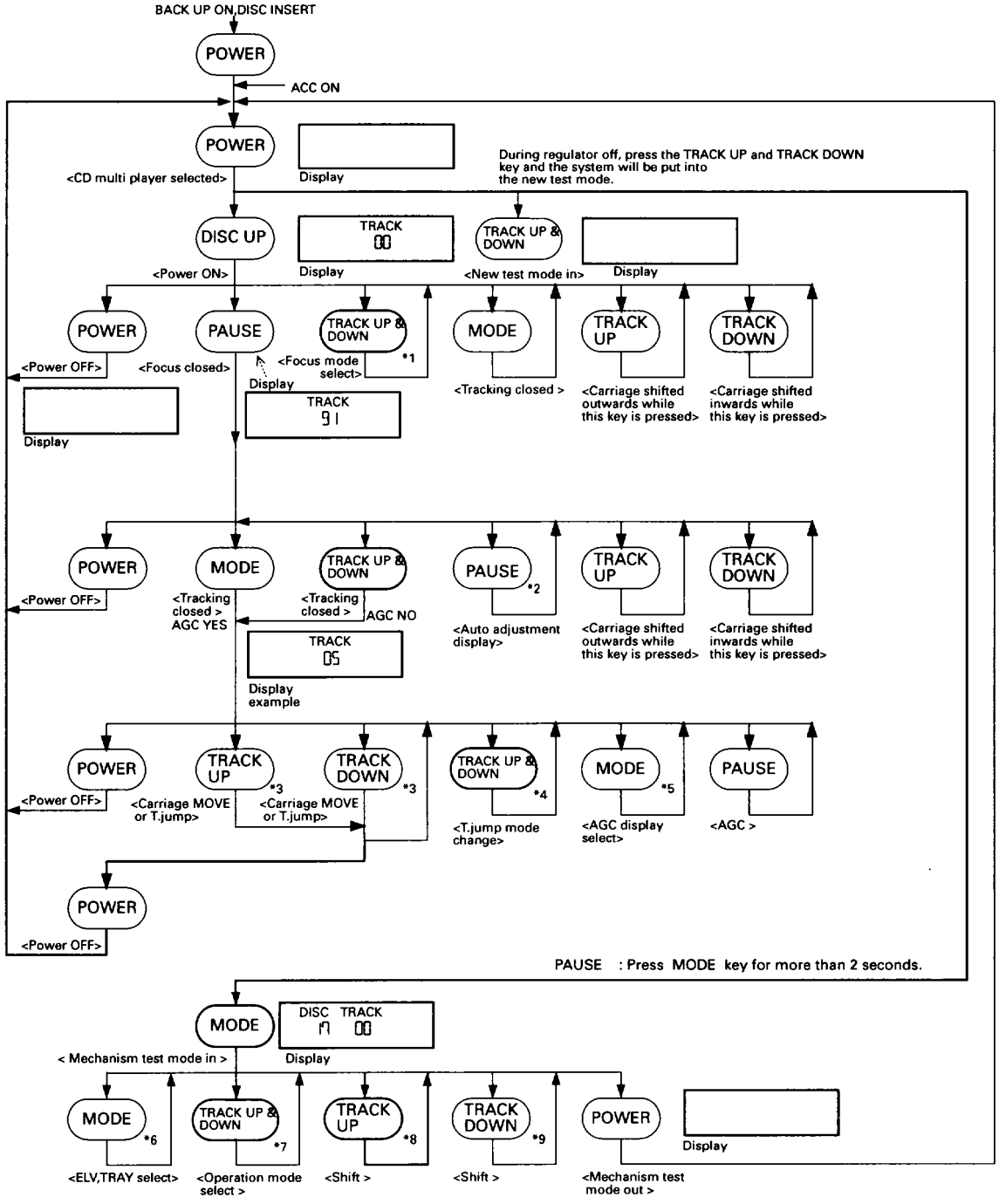
*6 ELV motor select → TRAY motor select
17 0X Display 17 1X

*7 8ms pulse drive → 24ms pulse drive → DC drive
17 00 Display 17 01 17 02
48ms pulse drive → 100ms pulse drive → DC drive
17 10 Display 17 11 17 12

*8 ELV select : ELV dowm (Disc 1 to 6)
TRAY select : TRAY out

*9 ELV select : ELV up (Disc 6 to 1)
TRAY select : TRAY in

● Test Mode (2) Flow Chart (For Tracking Close)



*1 Normal focus close → S curve check → Focus EQ check
00 Display 01 02

*2 Normal display → Focus cancel → Tracking offset → Tracking balance (Close spindle-rough)

*3 100 TRK jump & carriage MOVE continue only while the keys are released

*4 SINGLE → 4TRK → 10TRK → 32TRK → 100TRK → C.MOVE

*5 Normal display → Focus gain → Tracking gain → Focus bias

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17 0X Display 17 1X

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48ms pulse drive → 100ms pulse drive → DC drive
17 10 Display 17 11 17 12

*8 ELV select : ELV dowm (Disc 1 to 6)
TRAY select : TRAY out

*9 ELV select : ELV up (Disc 6 to 1)
TRAY select : TRAY in

6.2 ERROR NUMBERS AND NEW TEST MODE

● New Test Mode(aging operation and setup analysis)

The single CD player plays in normal mode. After being set up, it will display FOK (focus), LOCK (spindle), subcode, sound skip, protection against a mechanical error or the like, occurrence of an error, cause and time of an expiry, if any, (and disc number)

During the setup, the CD software operation status (internal RAM and C-point)is displayed.

(1) How to enter NEW TEST Mode

See the test mode flow chart Page 14,15.

(2) Relations of keys between TEST, NEW TEST and Mechanism TEST Modes

Keys	Test Mode (1)		New Test Mode		Mechanism Test Mode
	Regulator OFF	Regulator ON	PLAY in progress	Error Occurred, Protection Activated	
DISC UP	Regulator ON	Regulator OFF	—	Time of occurrence/ cause of error select	back to the test mode
TRACK UP	—	FWD-Kick	FF/TRACK+	—	Playing the mechanism
TRACK DOWN	—	REV-Kick	REV/TRACK-	—	Playing the mechanism
MODE	—	Tracking close	SCAN	—	—
PAUSE	—	Focus close	—	—	TRAY/ELV select
MANUAL	To New Test Mode	Jump Mode Select	AUTO/MANU	TRACK No./time of occurrence select	Operation step select

Operations,such as EJECT, CD ON/OFF, etc. are performed normally

(3) Error Cause (Error Number) Code

Error Code	Classification	Mode	Description	Cause/Detail	
40	ELECTRIC	PLAY	FOK=L 100ms	Put out of focus	Scratch, Stain, Vibration, Servo defect, etc...
41	ELECTRIC	PLAY	LOCK=L 100ms	Spindle unlock	
42	ELECTRIC	PLAY	Subcode unacceptable 500ms	Failed to read subcode	
43	ELECTRIC	PLAY	Sound skipped	Last address memory operated	

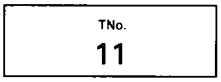
(4) Indicating an Operation Status During Setup

Status No.	Description	Protection operation
01	Carriage home mode started	None
02	Carriage moving inwards	10-second time out, Home switch failed
03	Carriage moving outwards	10-second time out, Home switch failed
05	Carriage moving outwards	None
11	Setup started	None
12	Spindle turn/Focus search started	None
13	Waiting for focus closure (XSI=L)	Failure to close focus
10,14	Waiting for focus closure (FOK=H)	Failure to close focus
15, 16, 17	Focus closed, Tracking open	Focus disrupted
18	During focus AGC	Focus disrupted
19	During tracking AGC	Disrupted focus
20	Waiting for MIRR, LOCK or subcode read Carriage closed, SPINDLE=ADAPTIVE	Focus disrupted, MIRR NG, Failure to lock, failed to read subcode

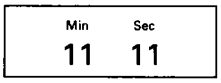
(5) Example of Display.

·SET UP in progress

Auto



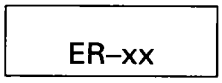
Manual



·Operation (PLAY, SEARCH, etc.) in progress perfectly identical with that in the normal mode.

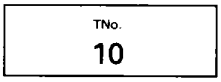
·Protection/Error upon occurrence

(a)Error number indicated

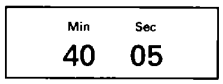


Select the display with the DISC UP key.

(b)Track number indicated



(c)Absolute time indicated



Select the display with the MANUAL key.

● Error Number Indication

If the CD should fail to operate or if an error has taken place during operation the player will enter into the error mode, and the cause of the error will be numerically indicated.

This is aimed at assisting in analysis or repair.

(1) Basic Means of Display

·Examples of Display ER-XX

(2) Error Codes

Error Code	Classification	Description	Cause/Detail
10	ELECTRIC	Carriage home failure	Carriage doesn't move to or from the innermost position →Home switch failed and/or carriage immobile
11	ELECTRIC	Focus failure	Focus failed →Defects, disc upside-down, severe vibration
12	ELECTRIC	SETUP failure Subcode failure	Spindle failed to lock or subcode unreadable →Spindle defective, defect, severe vibration
14	ELECTRIC	Mirror failure	Unrecorded CD-R The disc is upside-down, defects, vibration
17	ELECTRIC	Set up failure	AGC protect failed →Defects, disc upside-down, severe vibration
19	ELECTRIC	Set up failure	Tracking error waveform is too unbalanced (>50%) or level is too small →The P.U.unit or tracking error circuitry is N.G.
30	ELECTRIC	Search time out	Failed to reach target address →Carriage/tracking defective and/or defects
A0	SYSTEM	Power failure	Power overvoltage or short circuit detected →Switching transistor defective and/or power abnormal
A1	SYSTEM	Mechanism power failure	Mechanism elevation reference voltage is out of prescription →EREF adjustment VR and/or power abnormal
50	MECHANISM	An error upon ejection	MAG switch release time has time out Elevation time out when eject
60	MECHANISM	An error while putting in and out the tray	Tray in / out time has time out Tray is caught when put in
70	MECHANISM	An error upon elevation	Elevation time has time out
80	MECHANISM	An error with an empty magazine inserted	No disc is available

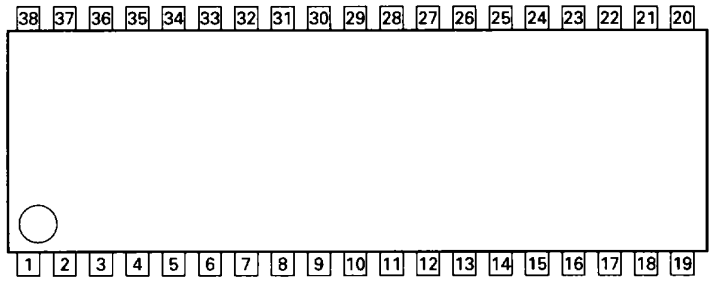
* Setup means a series of operations after focusing up to sound output.

7. IC INFORMATION

● **Pin Functions (UPC2572GS)**

Pin No.	Pin Name	I/O	Function and Operation
1	EFM-IN	I	EFM comparator input
2	AGC-OUT	O	AGC amplifier output
3	C. AGC		Connects AGC peak detection condenser
4	RF-IN	I	RF signal DC component cut input
5	RF-OUT	O	RF amplifier output
6	RF-	I	RF amplifier inverted input
7	C1, 3T		Connects RF3T component detection condenser
8	C2, 3T		Connects RF3T component detection condenser
9	Vcc		Power supply
10	A	I	A signal input
11	C	I	C signal input
12	B	I	B signal input
13	D	I	D signal input
14	F	I	F signal input
15	E	I	E signal input
16	PD	I	APC amplifier input
17	LD	O	APC amplifier output
18	LDON	I	Laser diode ON/OFF input
19	VREF-OUT	O	Reference voltage output
20	VREF-IN	I	Reference voltage input
21	DET-OUT	O	Vibration detection circuit output
22	DET-IN	I	Vibration detection circuit input
23	TE-OUT2	O	Tracking error amplifier output (fourfold gain)
24	TE-OUT1	O	Tracking error amplifier output (singlefold gain)
25	TE-	I	Tracking error amplifier inverted input
26	GND		GND
27	FE-	I	Focus error amplifier inverted input
28	FE-OUT	O	Focus error amplifier output
29	C.FE	I	Focus error signal DC component cut input
30	3T-OUT	O	RF3T component output
31	MIRR	O	MIRR signal output
32	RFOK	O	RFOK signal output
33	DEFECT	O	DEFECT signal output
34	C. DEF		Connects DEFECT signal detection condenser
35	EFM-OUT	O	EFM comparator output
36	ASY	I	EFM comparator level input
37	TE-BAL	I	Tracking balance control
38	FE-BAL	I	Focus balance control

UPC2572GS

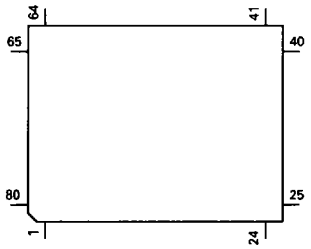


● **Pin Functions (UPD63702GF)**

Pin No.	Pin Name	I/O	Function and Operation
1	D.VDD		Supplies current of positive voltage to the logic circuits
2	$\overline{RST}$	I	System reset input pin
3	AO	I	Microcomputer interface AO="L": $\overline{STB}$ active and set to address register AO="H": $\overline{STB}$ active and set to parameter
4	$\overline{STB}$	I	Signal to latch serial data within the LSI
5	$\overline{SCK}$	I	Clock input pin to input and output serial data
6	SO	O	Outputs serial data and status signal
7	SI	I	Serial data input pin
8	D.GND		Logic circuit GND
9	X.GND		Crystal oscillation circuit GND
10	XTAL	I	Crystal oscillator connection pin
11	$\overline{XTAL}$	O	Crystal oscillator connection pin
12	X.VDD		Supplies current of positive voltage to the crystal oscillation circuit
13	DA.VDD		Supplies current of positive voltage to the D/A converter
14	R+	O	Right channel analog audio data output pin
15	R-	O	Right channel analog audio data output pin
16,17	DA.GND		D/A converter GND
18	L-	O	Left channel analog audio data output pin
19	L+	O	Left channel analog audio data output pin
20	DA.VDD		Supplies current of positive voltage to the D/A converter
21	D.VDD		Supplies current of positive voltage to logic circuit
22	FLAG	O	Flag output pin to indicate that audio data currently being output consists of noncorrectable data
23	WDCK	O	Pin to output double the frequency of LRCK
24	C16M	O	Pin to output the clock
25	EMPH	O	Output pin for the pre-emphasis data in the sub-Q code
26	DIN	I	Input pin for serial audio data
27	DOUT	O	Output pin for the serial audio data
28	SCKO	O	Output pin for the clock for the serial audio data
29	LRCK	O	Signals to distinguish the right and left channels of the audio data output from DOUT. Frequency is 44.1kHz at 50% duty at normal regeneration
30	TX	O	Output pin for the digital audio interface data
31	CTLV	I	Oscillation control pin for high-frequency clock generation VCO used for the digital PLL upon regeneration at fast speed of 2- or 4-fold
32	POUT	O	Output point for phase comparison
33	D.GND		GND for the logic circuit
34	VCO	I	Input pin for the inverter
35	$\overline{VCO}$	O	Output pin for the inverter
36	D.VDD		Supplies current of positive voltage to the logic circuit
37	PLCK	O	Pin for monitoring the bit clock
38	LOCK	O	Indicates "H" when the synchronized pattern detection signal matches the frame counter output at the EFM recovery modulation, and "L" when they don't match
39	WFCK	O	Minute-cycle signal for the bit clock, the signal indicates the cycle of 1 frame (approx. 7.35kHz)
40	RFCK	O	Minute-cycle signal for the clock, the signal indicates cycle of 1 frame (approx. 7.35kHz)
41	D.GND		GND for the logic circuit
42,43	TEST0,1	I	Test pins
44,45	TM2,TM4	I	Pins for controlling regeneration at fast speed of 2- or 4-fold
46-49	T4-T7	I	Test pins
50,51	C1D1,C1D2	O	Output pin for indicating the C1 error correction results
52-54	C2D1-C2D3	O	Output pin for indicating the C2 error correction results
55	D.VDD		Supplies current of positive voltage to the logic circuit
56	SFSY	O	Outputs 1 word of the subcode. Generally, 1 cycle is approx 136 micro seconds
57	SBSY	O	The signal indicates the beginning of the subcode block. The SFSY signal is output at high level every 98 times

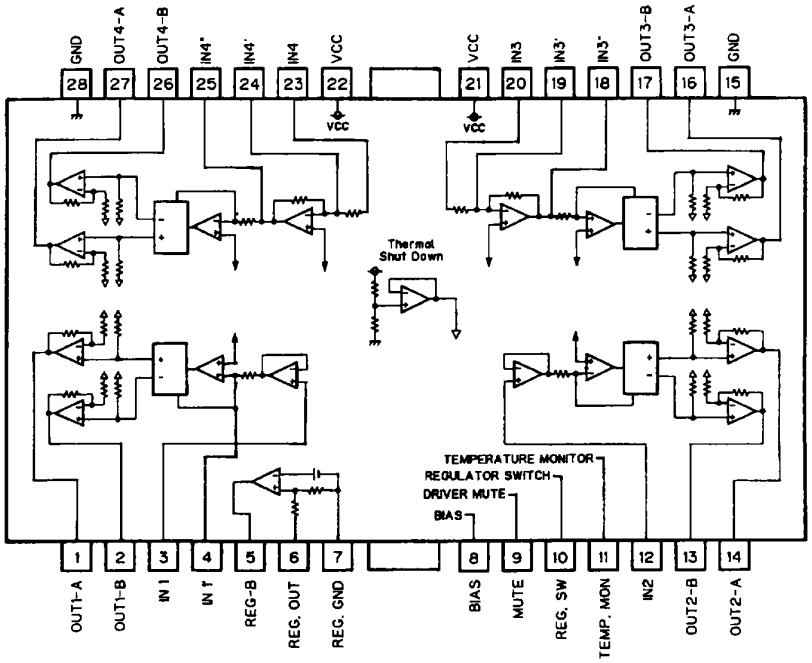
Pin No.	Pin Name	I/O	Function and Operation
58	SBSO	O	Output pin for the subcode data
59	SBCK	I	Input pin for the clock signal for read-out of the subcode data
60	A.GND		GND for the analog circuit
61	MD	O	Output pin for the spindle drive
62	SD	O	Output pin for the sled drive
63	TD	O	Output pin for the tracking drive
64	FD	O	Output pin for the focus drive
65	FBAL	O	Output pin for the focus balance control
66	TBAL	O	Output pin for the tracking balance control
67	A.VDD		Supplies current of positive voltage to the analog circuit
68	TBC	I	Switches coefficient banks for the tracking filter
69	EFM	I	Input pin for the EFM signal
70	HOLD	I	Input pin for the hold control signal
71	RFOK	I	Input pin for the RFOK signal
72	MIRR	I	Input pin for the MIRR signal
73	A.GND		GND for the analog circuit
74,75	VR2,1	I	The signal input through these pins is digitized to 8-bit by the A/D converter, which by operation of the assigned register, can be read into the microcomputer
76	FE	I	Inputs a focus-error signal from the RF amplifier
77	TE	I	Inputs a tracking-error signal from the RF amplifier
78	TEC	I	Input pin for the tracking comparator
79	REFOUT	O	Output point for midpoint potential for the A/D converter for the LSI portion
80	A.VDD		Supplies current of accurate voltage to the analog circuit

*UPD63702GF



IC's marked by are MOS type.*
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

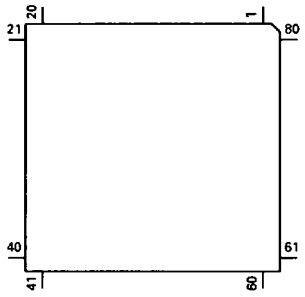
XLA6997FM



● **Pin Functions (PD5358A)**

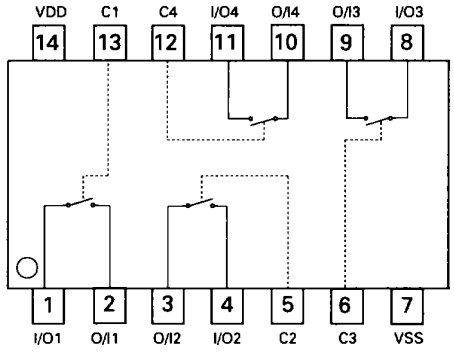
Pin No.	Pin Name	I/O	Format	Function and Operation
1	VDIN	I		Power supply short sensor input
2	NC			Not used
3	PLDT	O	NM	Data output for PLL IC
4	PLCK	O	NM	PLL clock output for PLL IC
5	PLCS	O	NM	PLL chip select output for PLL IC
6	XA0	O	NM	Control signal distinguishing data for CD core unit LSI
7	XSCK	I/O	NM	Clock input/output for CD core unit LSI
8	XSO	O	NM	Data output for CD core unit LSI
9	XSI	I		Data input from CD core unit LSI
10	$\overline{\text{XSTB}}$	O	C	Strobe output for CD core unit LSI
11	$\overline{\text{XRST}}$	O	C	Reset output for CD core unit LSI
12	$\overline{\text{DCE}}$	O	C	Chip enable output for CD core unit compression IC
13	NC			Not used
14	$\overline{\text{ASENS}}$	I		ACC power sense input
15	$\overline{\text{BSENS}}$	I		Back up power sense input
16,17	NC			Not used
18	SYSPW	O	C	System power supply control output
19	DISPPW	O	C	Power supply control output for display IC
20	DPDT	O	C	Display data output
21	KYDT	I		Key data input
22	$\overline{\text{EJSW}}$	I		Eject key switch interrupt input
23	$\overline{\text{MAG}}$	I		Magazine lock switch interrupt input
24	CNVSS			GND
25	$\overline{\text{RESET}}$	I		Reset input
26	POWER	O	C	CD +5V control
27	CONT	O	C	Server driver power control output (CD)
28	XIN	I		Crystal oscillating element connection pin
29	XOUT	O		Crystal oscillating element connection pin
30	VSS			GND
31-55	NC			Not used
56	6/12	I		6/12 switching input
57	NC			Not used
58	MIRR	I		Mirror detection input (CD)
59	LOCK	I		Spindle lock input (CD)
60	FOK	I		FOK signal input (CD)
61	CSEL	I		Compression select input(CD)
62	PREN	O	C	Pre-emphasis select output
63	NC			Not used
64	PRMR	I		Compression display select input
65	I1,3	O	C	Motor driver control output
66	I2	O	C	Motor driver control output
67	I4	O	C	Motor driver control output
68	CDMUTE	O	C	Mute control output (CD)
69	$\overline{\text{ADENA}}$	O	C	A/D converter reference voltage output
70	$\overline{\text{TESTIN}}$	I		Test program mode input
71	VCC			Power supply terminal
72	VREF			A/D converter reference voltage
73	AVSS			A/D converter GND
74	SIMUKE	I		Destination information input
75	UL	I		ELV position select input
76	$\overline{\text{DISC}}$	I		Disc detector input
77	ELVPVO	I		Voltage input from ELV position sense
78	ELVREF	I		ELV reference voltage input
79	MSW	I		Disc sense timing input and tray position input
80	NC			Not used

*PD5358A

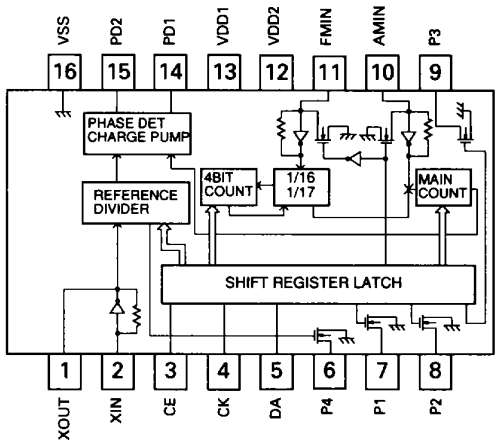


Format	Meaning
C	C MOS
NM	Middle resistivity N channel open drain

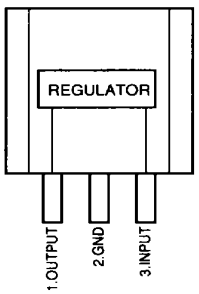
*BU4066BCF



BU2611FS


VSS PD2 PD1 VDD1 VDD2 FMIN AMIN P3
16 15 14 13 12 11 10 9
PHASE DET CHARGE PUMP
REFERENCE DIVIDER
4BIT COUNT
1/16 1/17
MAIN COUNT
SHIFT REGISTER LATCH
1 2 3 4 5 6 7 8
XOUT XIN CE CK DA P4 P1 P2

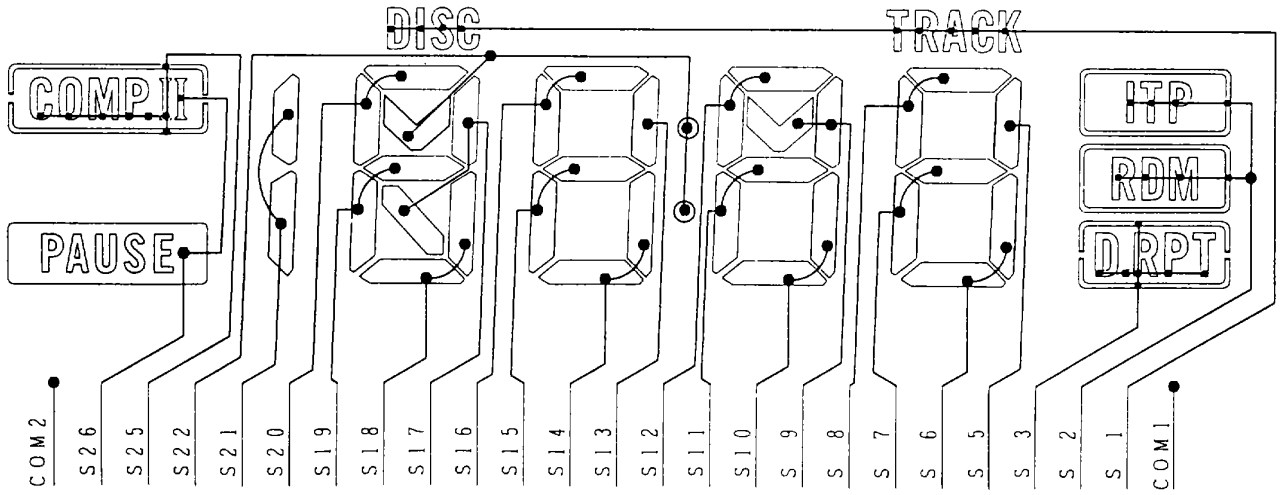
NJM78L06A



8. LCD

● **CAW1274**

SEGMENT



COMMON

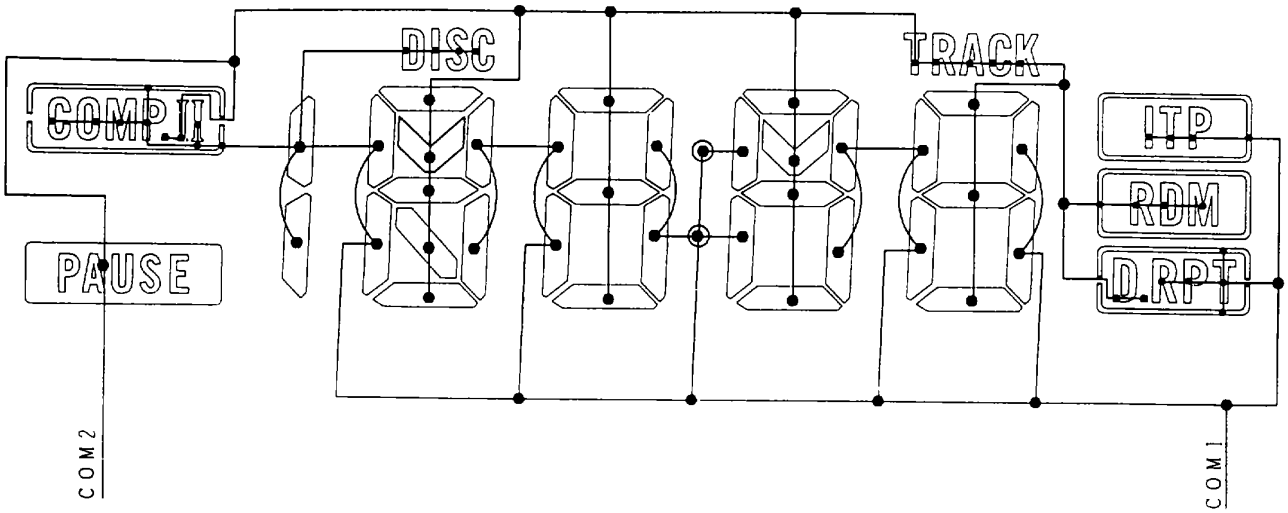


Fig. 9

9. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○S○○○J,RS1/○○S○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

=====Circuit Symbol & No.	Part Name=====	Part No.
Unit Number : CWX1782		
Unit Name : Antenna Select Unit		
MISCELLANEOUS		
Q 4506		2SC1740S
D 4506		1SS133
L 4503	Ferri-Inductor	LAU4R7K
RY4501	Relay	CSR1014
RESISTORS		
R 4520		RD1/4PU683J
R 4521		RD1/4PU103J
CAPACITORS		
C 4518		CKCYB102K50
C 4519		CEA101M10LS
Unit Number : CWX1960		
Unit Name : System Unit		
MISCELLANEOUS		
IC 4301		BU4066BCF
IC 4351		BA1404F
IC 4352		UPC4570G
IC 4353		BU2611FS
IC 4701		PD5358A
IC 4951		PAJ002A
IC 4952		NJM78L06A
Q 4302 4955		IMD3A
Q 4303		IMH3A
Q 4304		FMG3A
Q 4352		IMX1
Q 4391 4392 4393		2SC2059
Q 4701		DTA144EK
Q 4951		2SD2396
Q 4952		IMX1
Q 4954		2SB1238
Q 4956 4957		2SB710A
Q 4958		IMH10A
D 4351		MA151WA
D 4352		RB706D40
D 4353		DA204K
D 4354		KV1440
D 4355		MA110
D 4951 4952		ERA15-02VH
D 4954 4956		UDZ5R1B
D 4955		UDZ3R3B
L 4301 4302	Filter	CTF1333
L 4351 4357	Chip Inductor	LCTA2R2J3225
L 4352	Inductor	CTF1302
L 4353	Coil	CTC1079
L 4355	Inductor	LCTA1R0J3225
L 4356	Inductor	LCTA101J3225
L 4358	Inductor	LCTAR68J3225
TC4351	Trimmer	CCG-088
X 4351	Resonator 38.000kHz	CSS1372
X 4352	Crystal 7.2MHz	CSS1030

=====Circuit Symbol & No.	Part Name=====	Part No.
X 4701	Resonator 6.14MHz	CSS1336
VR4351	Semi-fixed 4.7kΩ(B)	CCP1227
VR4352	Semi-fixed 22kΩ(B)	CCP1231
VR4353	Semi-fixed 2.2kΩ(B)	CCP1225
EF4951	EMI Filter	CCG1006
RESISTORS		
R 4301 4302		RS1/10S471J
R 4303 4304 4368		RS1/10S472J
R 4305 4306		RS1/10S361J
R 4307 4308 4971 4973		RS1/10S223J
R 4309 4310 4370 4956		RS1/10S681J
R 4311 4312		RS1/10S225J
R 4313 4314		RS1/10S112J
R 4315 4316 4351		RS1/10S362J
R 4352		RS1/10S681J
R 4353 4355 4357		RS1/10S392J
R 4354 4356 4708		RS1/10S102J
R 4358		RS1/10S683J
R 4359 4715 4729		RS1/10S103J
R 4360		RS1/10S513J
R 4361 4362 4743 4966		RS1/10S103J
R 4363		RS1/10S221J
R 4364 4365 4727 4728 4740		RS1/10S104J
R 4366		RS1/10S203J
R 4367		RS1/10S683J
R 4371		RS1/10S362J
R 4372		RS1/10S242J
R 4373		RS1/10S822J
R 4374		RS1/10S101J
R 4375		RS1/10S471J
R 4377		RS1/8S470J
R 4378 4379		RS1/10S223J
R 4381		RS1/10S823J
R 4386 4387 4388 4389		RS1/10S103J
R 4390		RS1/10S560J
R 4391		RS1/10S332J
R 4392 4712		RS1/10S104J
R 4393 4706 4707		RS1/10S222J
R 4394		RS1/10S244J
R 4395		RS1/10S154J
R 4396		RS1/10S152J
R 4397		RS1/10S331J
R 4701		RS1/10S433J
R 4702		RA3C103J
R 4703		RA3C222J
R 4704 4742 4959 4968		RS1/10S102J
R 4711 4717 4977		RS1/10S0R0J
R 4714		RS1/10S513J
R 4718 4722 4980		RS1/10S222J
R 4719		RS1/10S823J
R 4723		RS1/10S473J
R 4741 4954 4969 4970		RS1/10S104J
R 4951		RS1/10S183J
R 4952		RS1/10S752J
R 4953		RS1/10S204J
R 4955		RS1/10S391J

=====Circuit Symbol & No. Part Name=====		Part No.
R 4957		RS1/4S121J
R 4958		RS1/10S750J
R 4960 4972 4974		RS1/10S152J
R 4967		RS1/8S3R9J
R 4975		RS1/10S560J
R 4976		RS1/10S181J
CAPACITORS		
C 4301 4302		CEA330M6R3LL
C 4303 4304 4355 4360 4381 4701 4957 4958		CKSQYB103K50
C 4305 4306		CKSQYB392K50
C 4307 4308		CKSQYB332K50
C 4309 4310 4708 4709 4710		CKSQYB102K50
C 4311 4312		CSZS010M10
C 4351 4359 4361		CEA100M16LS2
C 4352 4383 4965 4968		CKSQYB103K50
C 4353		CCSQCH120J50
C 4354 4363		CEA220M16LS
C 4357		CEA1R0M50LS2
C 4358		CCSQCH160J50
C 4362		CKSYB105K16
C 4364 4375 4387 4399 4961 4966 4970		CKSQYB104K50
C 4365		CCSQCH271J50
C 4366		CCSQCH162J50
C 4368 4951		CEA100M16LL
C 4370 4371		CCSQCH270J50
C 4372 4955 4398		CKSQYB473K50
C 4373		CEALNP330M10
C 4374		CEA470M6R3LS
C 4377		CCSQCH180J50
C 4379 4702		CKSQYB104K50
C 4382		CCSQCH030C50
C 4384 4956		CEA220M16LL
C 4391 4395		CCSQCH010C50
C 4392		CCSQCH100J50
C 4393		CCSQCH330J50
C 4394		CCSQCH180J50
C 4396 4397		CKSQYB103K50
C 4703 4704		CKSQYB473K16
C 4952 4953 4954	470µF/16V	CCH1183
C 4959		CSZA220M10
C 4960		CKSQYB334K16
C 4962		CEAS221M10
C 4963		CEA101M10LL
C 4964		CEAS331M6R3
C 4967 4969		CKSQYB103K50
Unit Number : CXA7558		
Unit Name : Display Assy		
MISCELLANEOUS		
IC 4901		PD6128A
Q 4901		2SD1767
Q 4902		2SB710A
Q 4903		DTC114EK
D 4901		UDZ5R6B
D 4902 4903		MA153
D 4904 4905 4906 4907	Chip LED	CL150FG
D 4908 4909 4910 4911	Chip LED	CL150FG
D 4912 4913	Chip LED	CL150FG
D 4914 4915 4916 4917	Chip LED	CL150FG
X 4901	Ceramic Resonator 4.9152MHz	CSS1084
LCD4901	LCD	CAW1274
RESISTORS		
R 4901		RS1/10S102J
R 4903		RS1/10S223J
R 4904 4905		RS1/10S332J
R 4906 4920 4927 4928		RS1/10S473J
R 4909 4911 4921 4922 4923 4924 4925 4926		RS1/10S471J

=====Circuit Symbol & No. Part Name=====		Part No.
R 4929 4930		RS1/4S751J
R 4931 4932 4933		RS1/4S471J
R 4934		RS1/10S121J
CAPACITORS		
C 4901		CKSQYF473Z50
C 4902 4903		CSZSR100M6R3
C 4904 4905		CKSQYB103K50
Unit Number : CWX1943		
Unit Name : CD Core Unit		
MISCELLANEOUS		
IC 101		UPC2572GS
IC 201		UPD63702GF
IC 301		XLA6997FM
IC 302		LB1836M
IC 601		XRA4560F
IC 602		XRA4560F
IC 604		NJM78L05UA
IC 701		PQ05TZ51
Q 101		2SD1664
Q 102		UMD2N
D 701 702		1SR154-400
X 201	Ceramic Resonator16.93MHz	CSS1363
S 801 802	Switch (EJECT,RESET)	CSG1076
S 803	Switch (MAG)	CSN1028
VR 802	Semi-fixed 1kΩ(B)	CCP1175
RESISTORS		
R 101		RS1/8S100J
R 102		RS1/8S120J
R 103 116		RS1/16S102J
R 104 107		RS1/16S822J
R 105		RS1/16S682J
R 106		RS1/16S183J
R 108		RS1/16S333J
R 109		RS1/16S683J
R 110		RS1/16S134J
R 111		RS1/16S273J
R 113		RS1/16S222J
R 114 115 601 602 603 604		RS1/16S103J
R 117 118		RS1/16S163J
R 201		RS1/16S104J
R 202		RS1/16S104J
R 203		RS1/16S0R0J
R 504 507 806		RS1/16S102J
R 505		RS1/16S221J
R 506		RA3C221J
R 605 606 607 608		RS1/16S912J
R 609 610		RS1/16S153J
R 611 612		RS1/16S153J
R 613 614 615 616 617 618		RS1/16S562J
R 619 620		RS1/16S101J
R 801		RS1/10S681J
R 804		RS1/16S622J
R 805		RS1/16S562J
R 807		RS1/16S0R0J
CAPACITORS		
C 101 205 703		CEV101M6R3
C 102 124 202 612		CKSQYB104K16
C 103		CEV470M6R3
C 104		CKSQYB334K16
C 105		CCSRCH330J50
C 106 113 801		CKSRYB103K25
C 107		CEV4R7M35
C 108		CKSQYB273K25
C 109		CCSRCH101J50
C 110 122 611 802		CKSQYB104K16

=====Circuit Symbol & No.	Part Name=====	Part No.
C 111		CKSRYB332K50
C 112		CKSQYB473K25
C 114		CKSRYB391K50
C 115		CCSRCH121J50
C 116		CKSRYB682K50
C 117		CKSQYB333K25
C 118 119		CKSQYB334K16
C 120 121		CKSQYB224K16
C 123		CKSRYB472K50
C 125		CCSRCH060D50
C 126		CKSRYB153K25
C 201 702		CKSQYB334K16
C 206		CKSQYB224K16
C 207		CKSRYB102K50
C 208		CKSQYB224K16
C 301		CEV101M10
C 601 602		CCSRCH181J50
C 603 604		CCSRCH820J50
C 605 606		CCSRCH820J50
C 607 608		CKSRYB222K50
C 609 610		CCSRCH331J50
C 613		CKSQYB104K16
C 614		CKSQYB104K16
C 615		CEV101M10
C 701	22μF/6.3V	CCH1233
C 803		CKSRYB103K25

=====Circuit Symbol & No.	Part Name=====	Part No.
Unit Number :		
Unit Name : P.C.Board (A)		
Q 851		PT4800
S 853	Switch (HOME)	CSN1012
Unit Number :		
Unit Name : P.C.Board (B)		
D 851		CN504-2
S 851 852	Switch (TRP,DSP)	CSN1033
R 851		RS1/8S473J
R 852		RS1/8S753J
Unit Number :		
Unit Name : P.C.Board (C)		
M853	Motor Unit (TRAY)	CXA9139
Miscellaneous Parts List		
M851	Motor Unit (SPINDLE)	CXA8772
M852	Motor Unit (ELV)	CXA9146
M854	Motor Unit (CARRIAGE)	CXA9131
VR 801	Volume 10kΩ	CCW1021
	Pickup Unit (Service)	CXX1235

· The CDX-FM623S/ES and CDX-FM623S/GB Parts Lists enumerate the parts which differ from those enumerated in the CDX-FM623S/UC Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly. The CDX-FM623S/UC Parts List is given on page 24.

System Unit

	CDX-FM623S/UC CDX-FM623S/ES	CDX-FM623S/GB
Circuit Symbol & No.	Part No.	Part No.
C4305,4306	CKSQYB392K50	CKSQYB272K50
C4307,4308	CKSQYB332K50	CKSQYB222K50

Display Assy

	CDX-FM623S/UC CDX-FM623S/ES	CDX-FM623S/GB
Circuit Symbol & No.	Part No.	Part No.
D4904-4917	CL150FG	CL150DCD

10. BLOCK DIAGRAM

● SYSTEM

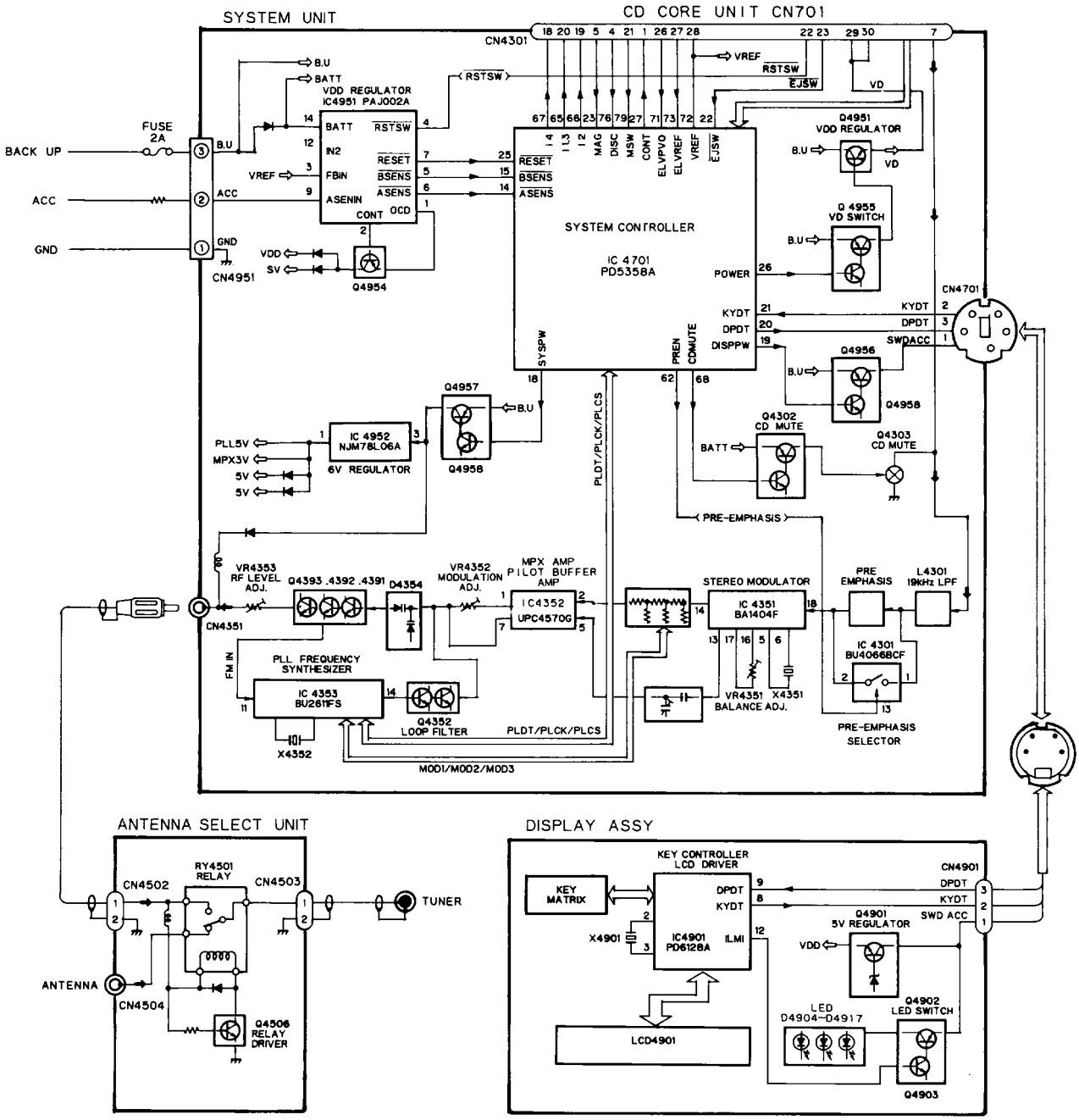


Fig.10

● CD Mechanism Module

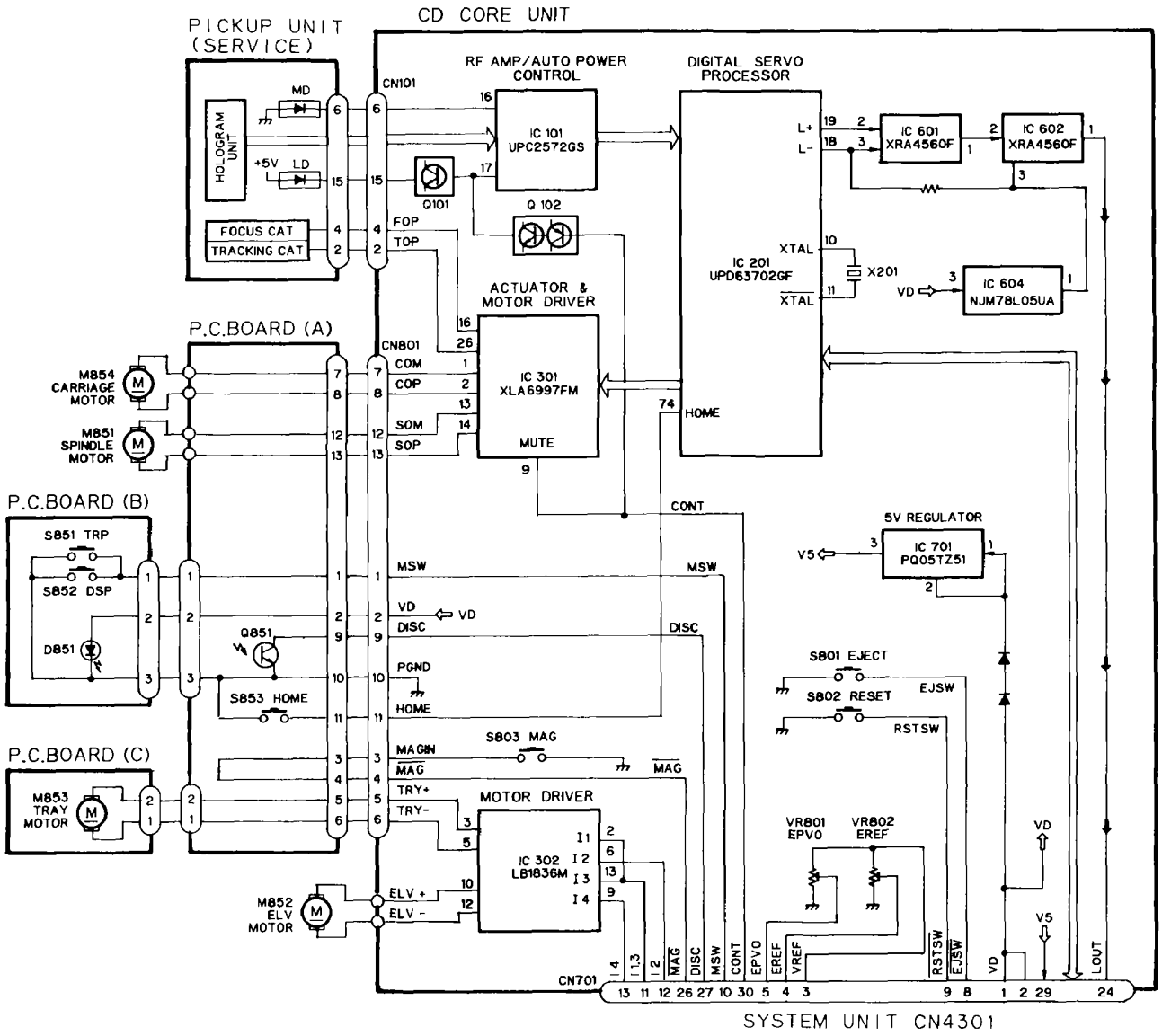
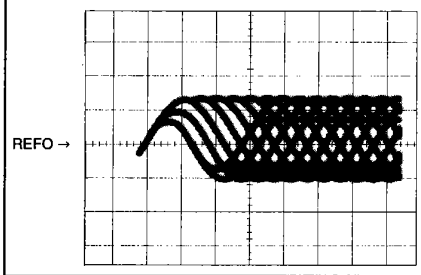


Fig.11

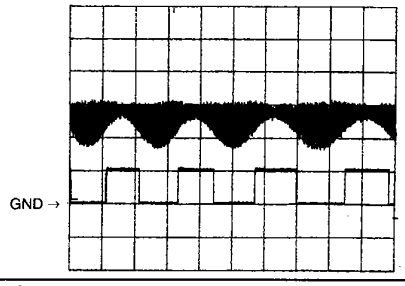
Note:1. The encircled numbers denote measuring pointes in the circuit diagram.
2. Reference voltage
REFO:2.5V

● Waveforms

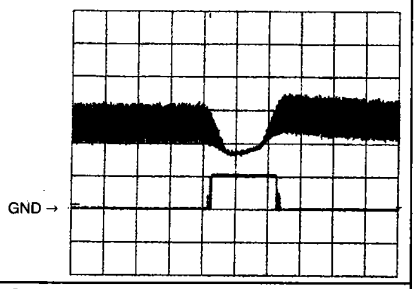
① RFO 0.5V/div. 0.5μs/div.
Normal mode: play



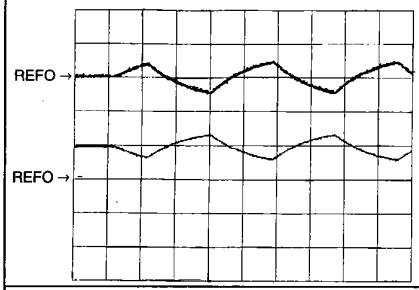
① CH1: RFO 1V/div. 0.5ms/div.
② CH2: MIRR 5V/div.
Test mode: Tracking open



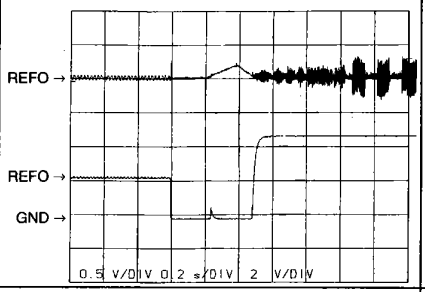
① CH1: RFO 1V/div. 0.5ms/div.
② CH2: MIRR 5V/div.
Normal mode: The defect part passes 800μm



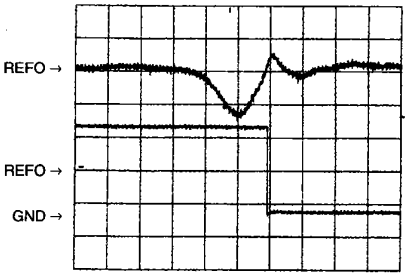
③ CH1: FD 0.5V/div. 0.2s/div.
④ CH2: FOP 2V/div.
Test mode: No disc, Focus close



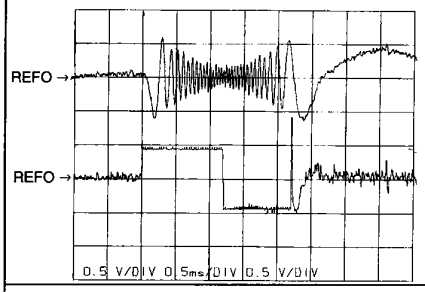
③ CH1: FD 0.5V/div. 0.2s/div.
⑤ CH2: FOK 2V/div.
Normal mode: Focus close



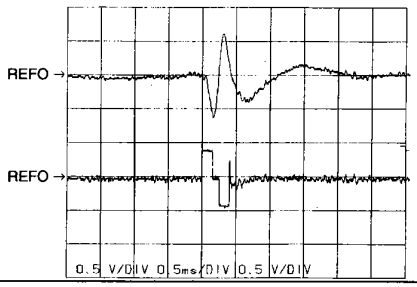
⑥ CH1: FEY 0.5V/div. 1ms/div.
⑦ CH2: XSI 2V/div.
Normal mode: Focus close



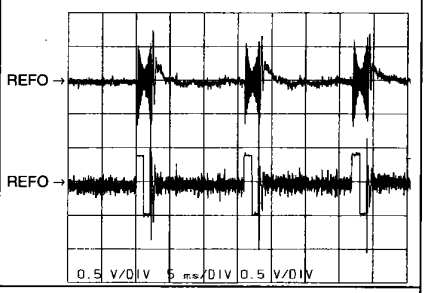
⑧ CH1: TEY 0.5V/div. 0.5ms/div.
⑨ CH2: TD 0.5V/div.
Test mode: 32 tracks jump (FWD)



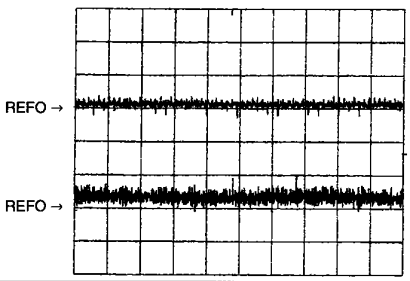
⑧ CH1: TEY 0.5V/div. 0.5ms/div.
⑨ CH2: TD 0.5V/div.
Test mode: Single jump (FWD)



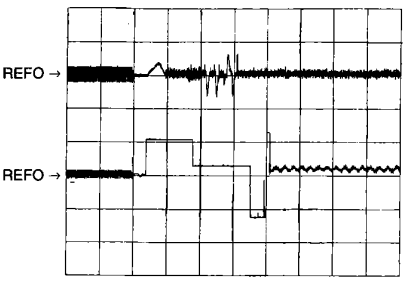
⑧ CH1: TEY 0.5V/div. 5ms/div.
⑨ CH2: TD 0.5V/div.
Test mode: 100 tracks jump (FWD)



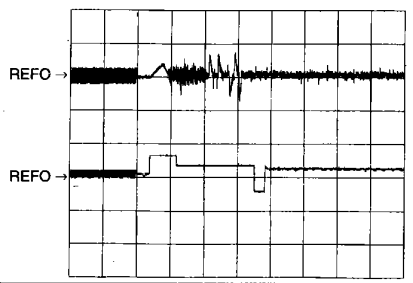
⑥ CH1: FEY 0.1V/div. 20ms/div.
③ CH2: FD 0.2V/div.
Normal mode: Play



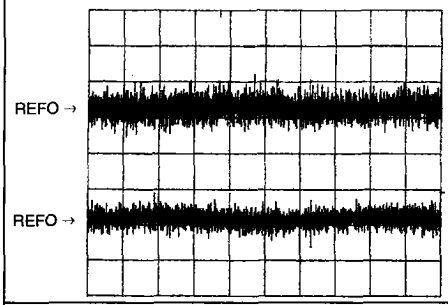
③ CH1: FD 0.5V/div. 0.5s/div.
⑩ CH2: MDYA 1V/div.
Normal mode: Focus close (12cm)



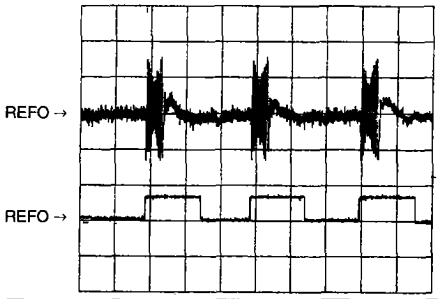
③ CH1: FD 0.5V/div. 0.5s/div.
⑩ CH2: MDYA 1V/div.
Normal mode: Focus close (8cm)



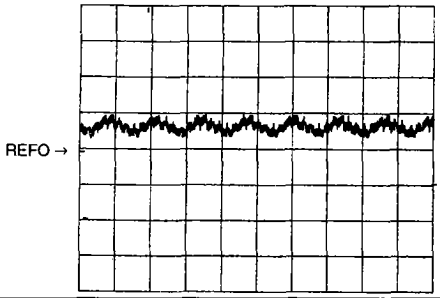
⑧ CH1: TEY 0.2V/div.
⑨ CH2: TD 0.2V/div. 20ms/div.
Normal mode: play



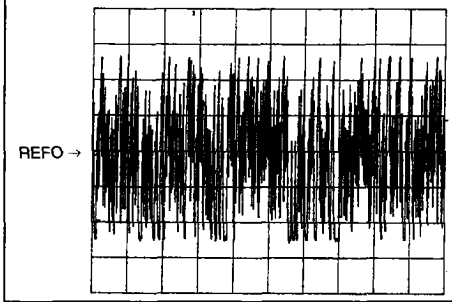
⑧ CH1: TEY 0.5V/div.
⑪ CH2: SD 0.5V/div. 5ms/div.



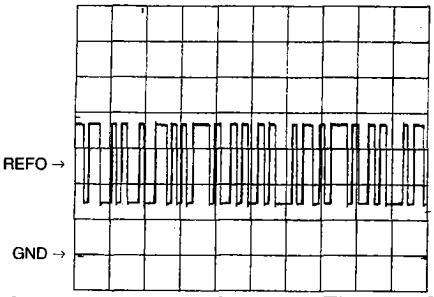
⑩ MDYA 0.5V/div. 0.1s/div.
Normal mode: Play (12cm)



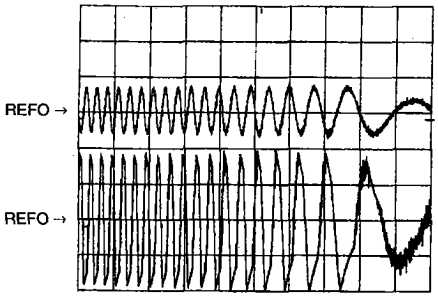
⑩ MDYA 0.5V/div. 10ms/div.
Long Search (12cm)



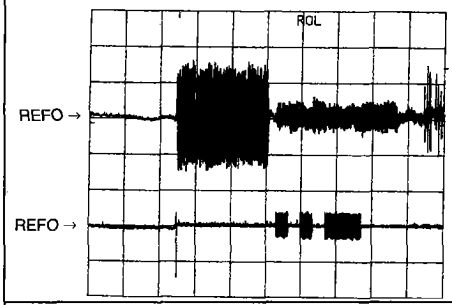
⑫ EFM 1V/div. 5µs/div.
Play



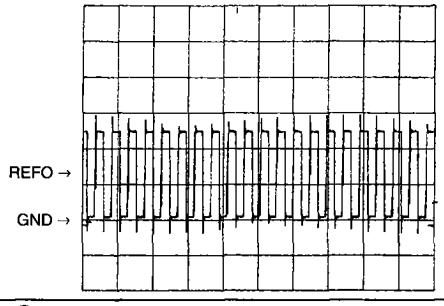
⑧ CH1: TEY 1V/div.
⑬ CH2: TEC 1V/div. 2ms/div.
Test mode: Focus close
Tracking open



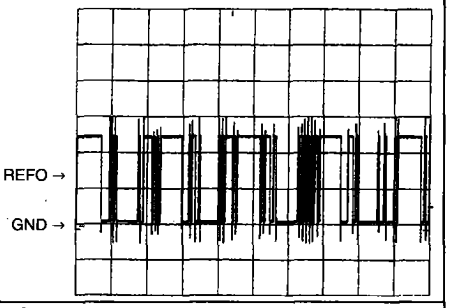
⑧ CH1: TEY 0.5V/div.
⑥ CH2: FEY 0.5V/div. 0.2s/div.
Normal mode: AGC after focus close



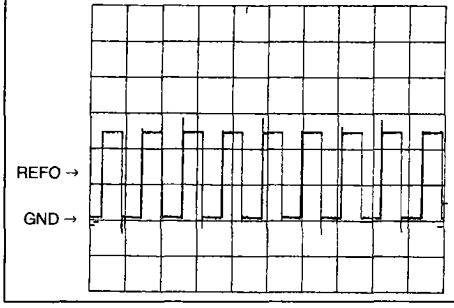
⑭ SCKO 2V/div. 1µs/div.
Play



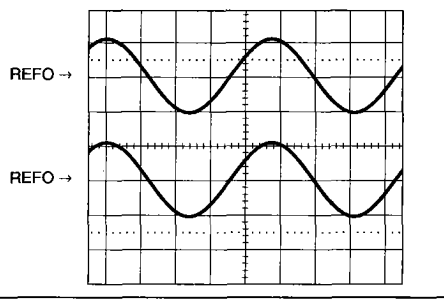
⑮ Dout 2V/div. 10µs/div.
Play



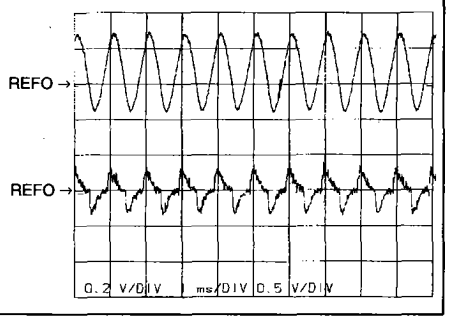
⑯ LRCK 2V/div. 20µs/div.

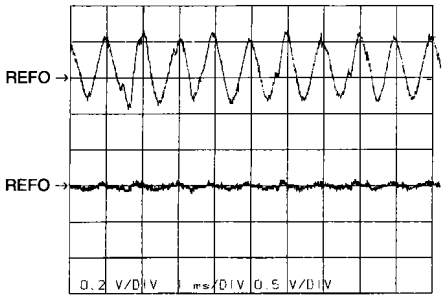
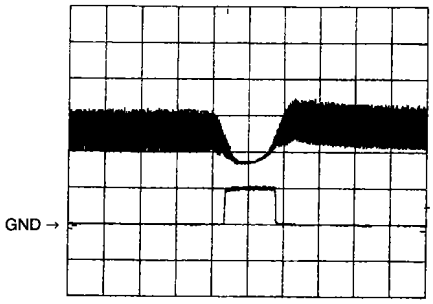
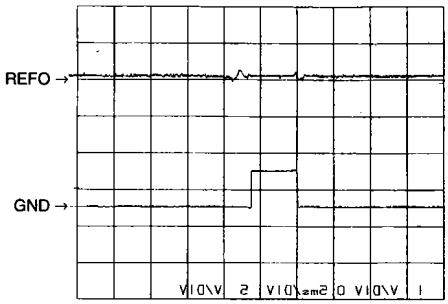


⑱ CH1: R OUT 1V/div.
⑰ CH2: L OUT 1V/div. 0.2ms/div.
Normal mode: Play (1kHz 0dB)



⑥ CH1: FEY 0.2V/div.
③ CH2: FD 0.5V/div. 1ms/div.
Normal mode: During AGC

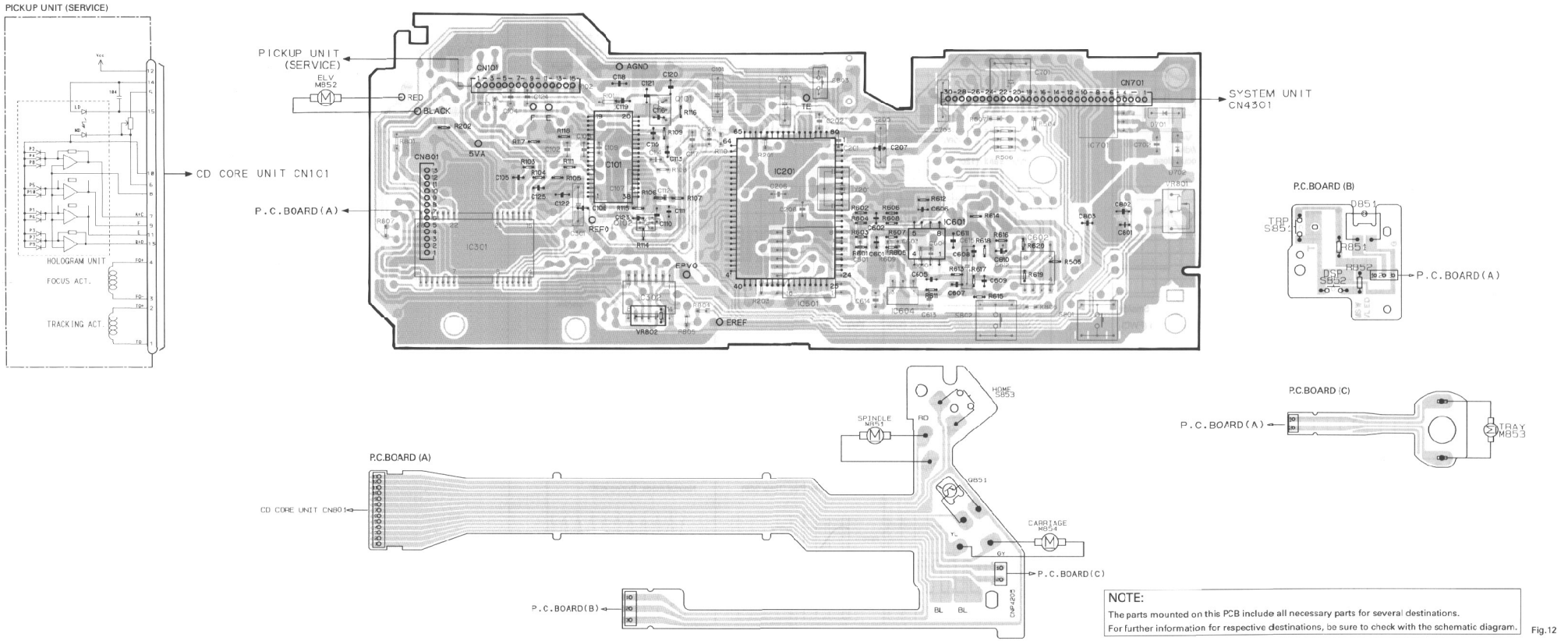


⑧ CH1: TEY 0.2V/div. ⑨ CH2: TD 0.5V/div. 1ms/div. Normal mode: During AGC 	① CH1: RFO 1V/div. ⑲ CH2: HOLD 5V/div. 0.5ms/div. Normal mode: The defect part passes 800µm 	③ CH1: FD 1V/div. ⑲ CH2: HOLD 5V/div. 0.5ms/div. Normal mode: The defect part passes 800µm 

11. CIRCUIT DIAGRAM AND PATTERN

11.1 CD MECHANISM MODULE

● **Connection Diagram**



NOTE:
The parts mounted on this PCB include all necessary parts for several destinations.
For further information for respective destinations, be sure to check with the schematic diagram.

Fig.12

● Circuit Diagram

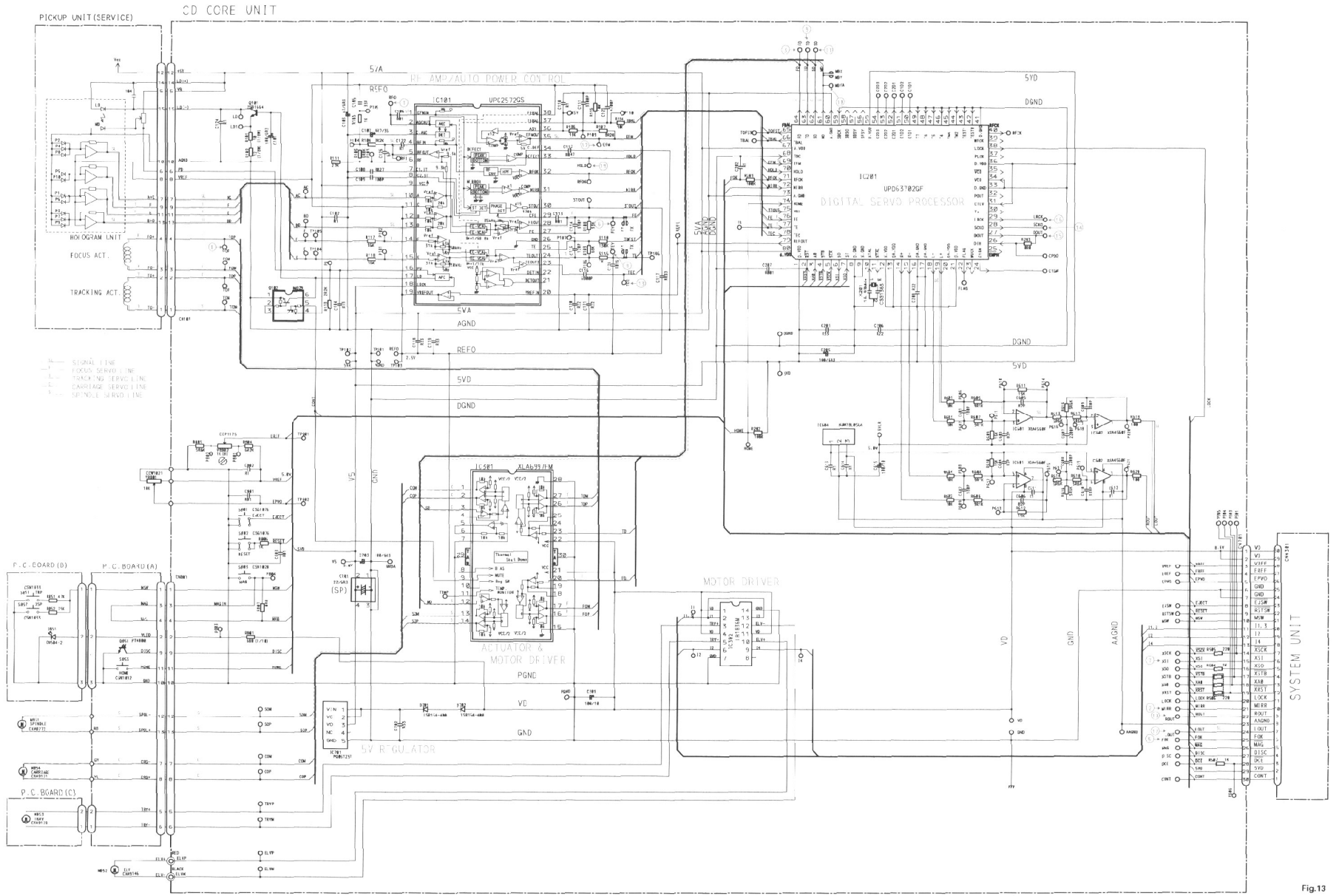


Fig.13

NOTE

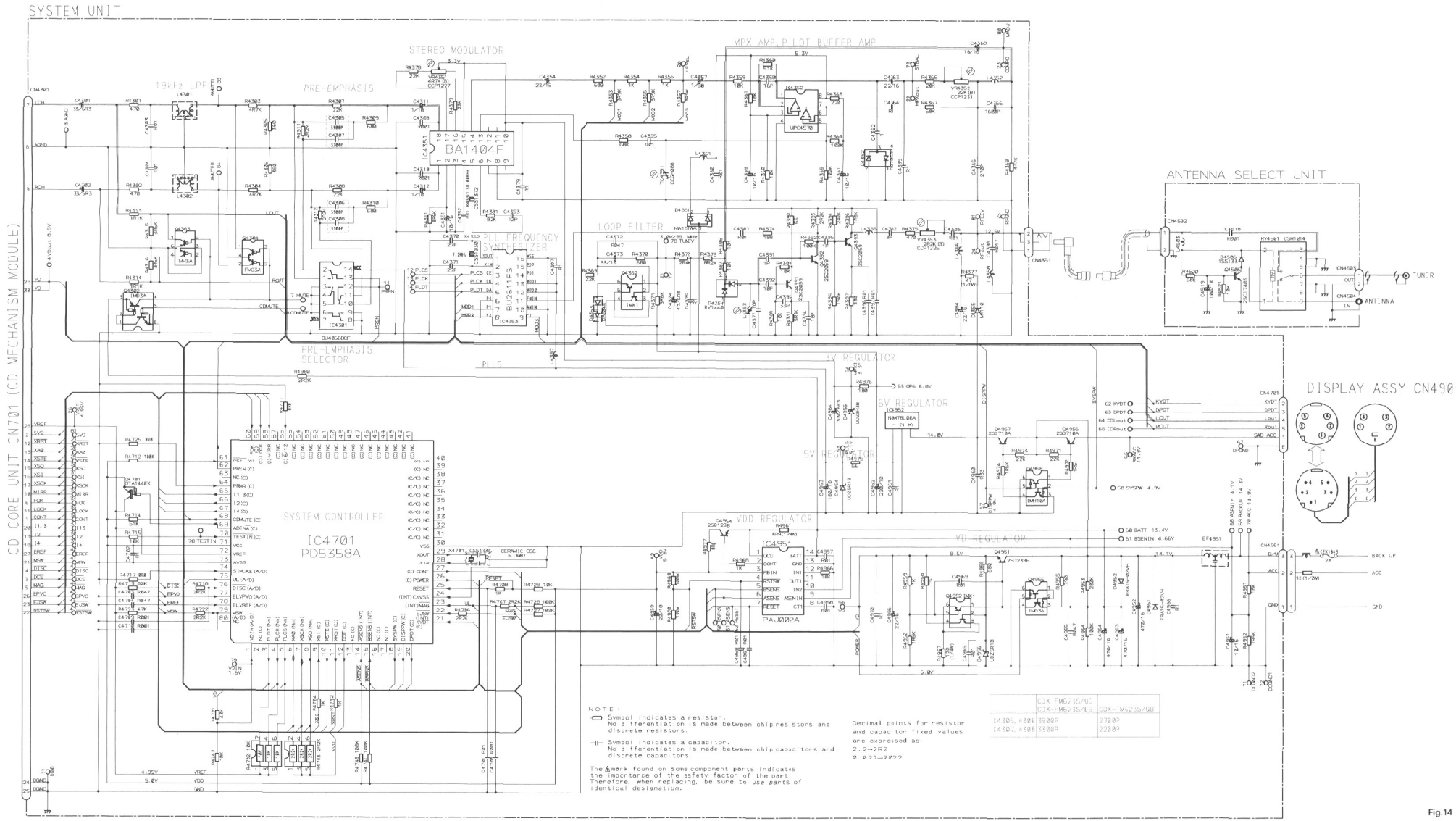
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as
2.2→2R2
0.022→R022

11.2 SYSTEM UNIT, ANTENNA SELECT UNIT

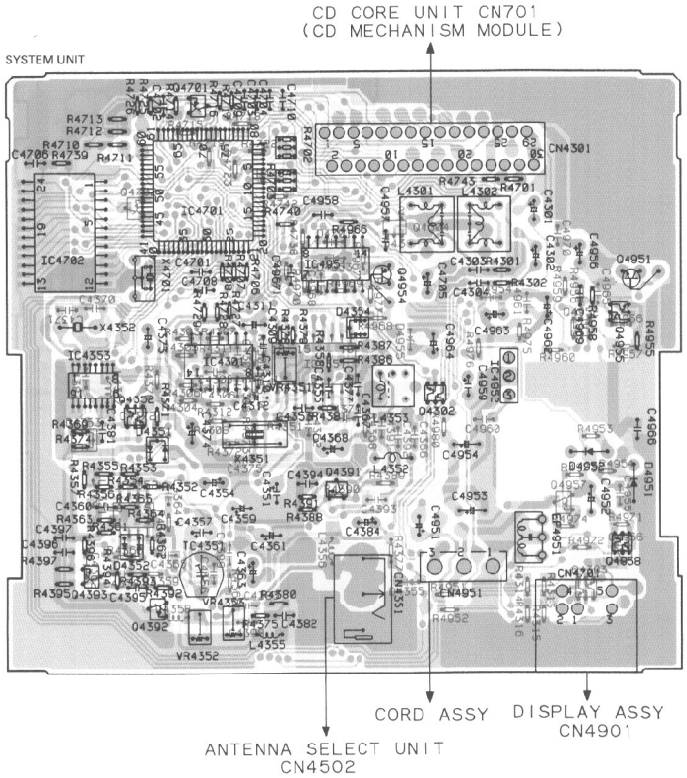
● Circuit Diagram



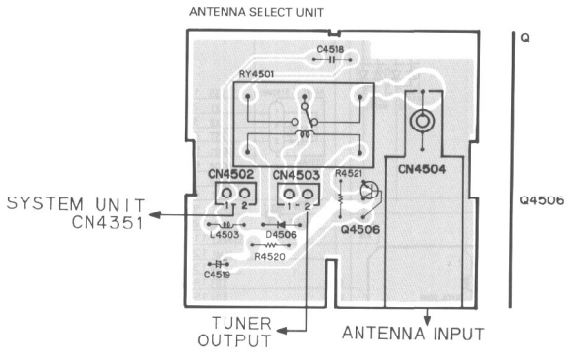
	CDX-FM623S/UC CDX-FM623S/ES	CDX-FM623S/GB
C4305, 4306 C4307, 4308	3300P 3300P	2700P 2200P

Fig.14

● Connection Diagram



ADJ	IC, Q
	Q4701
	Q4702
	IC4701 Q4304
	IC4702
	IC4951
	Q4951
	Q4954 Q4955
	Q4952
	IC4351
	IC4301
VR4351	IC4353
L4353	Q4352 IC4952
	Q4302
	Q4391
	IC4352
	Q4957
	Q4958 Q4956 Q4956
	Q4303
TC4351	
VR4353	
	Q4393
	Q4392
VR4352	



NOTE:
The parts mounted on this PCB include all necessary parts for several destinations.
For further information for respective destinations, be sure to check with the schematic diagram.

Fig.15

11.3 DISPLAY ASSY

● **Circuit Diagram**

	CDX-FM623/UC CDX-FM623/ES	CDX-FM623/GB
D4904-4917	CL150FG	CL150DCD

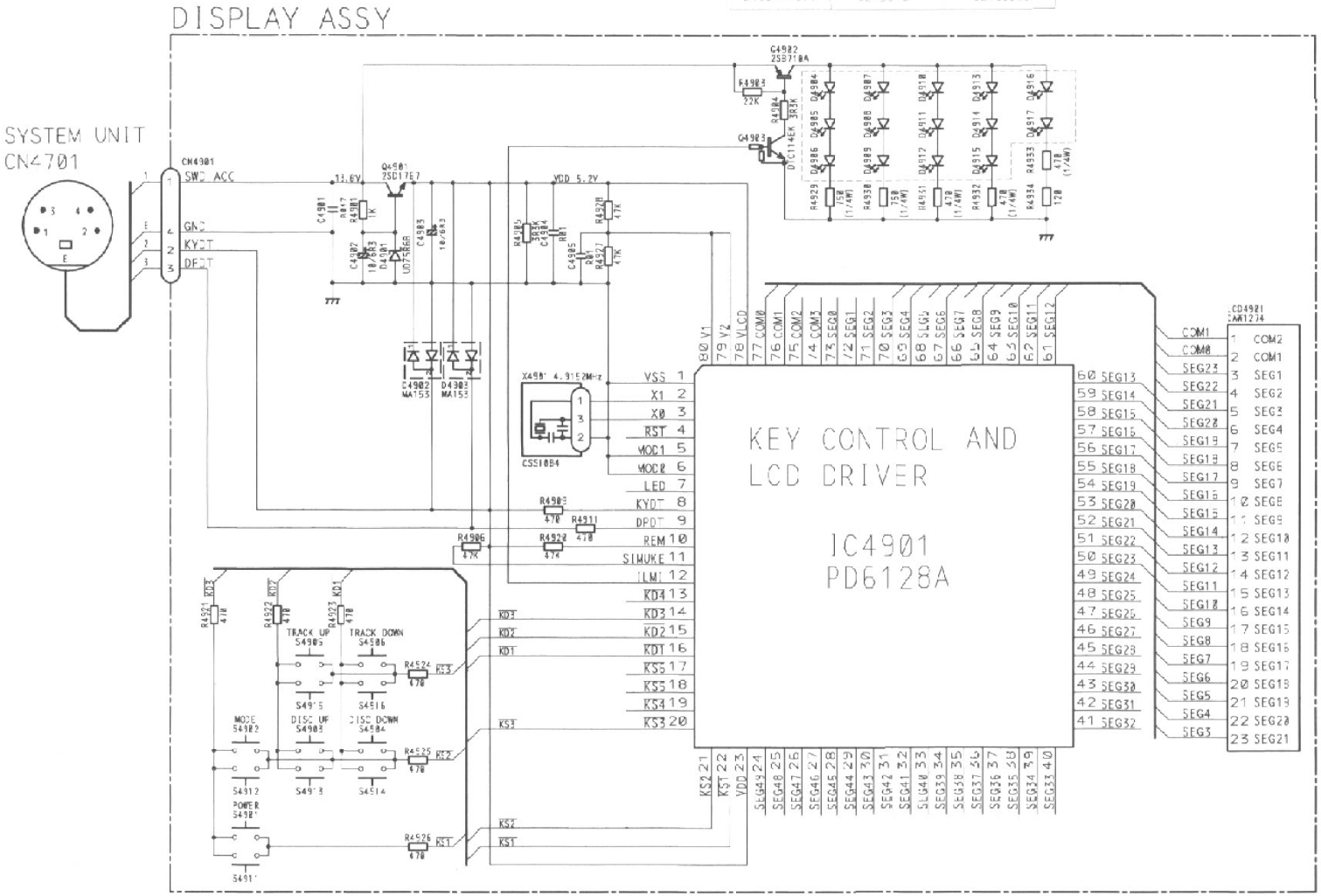


Fig.16

● Connection Diagram

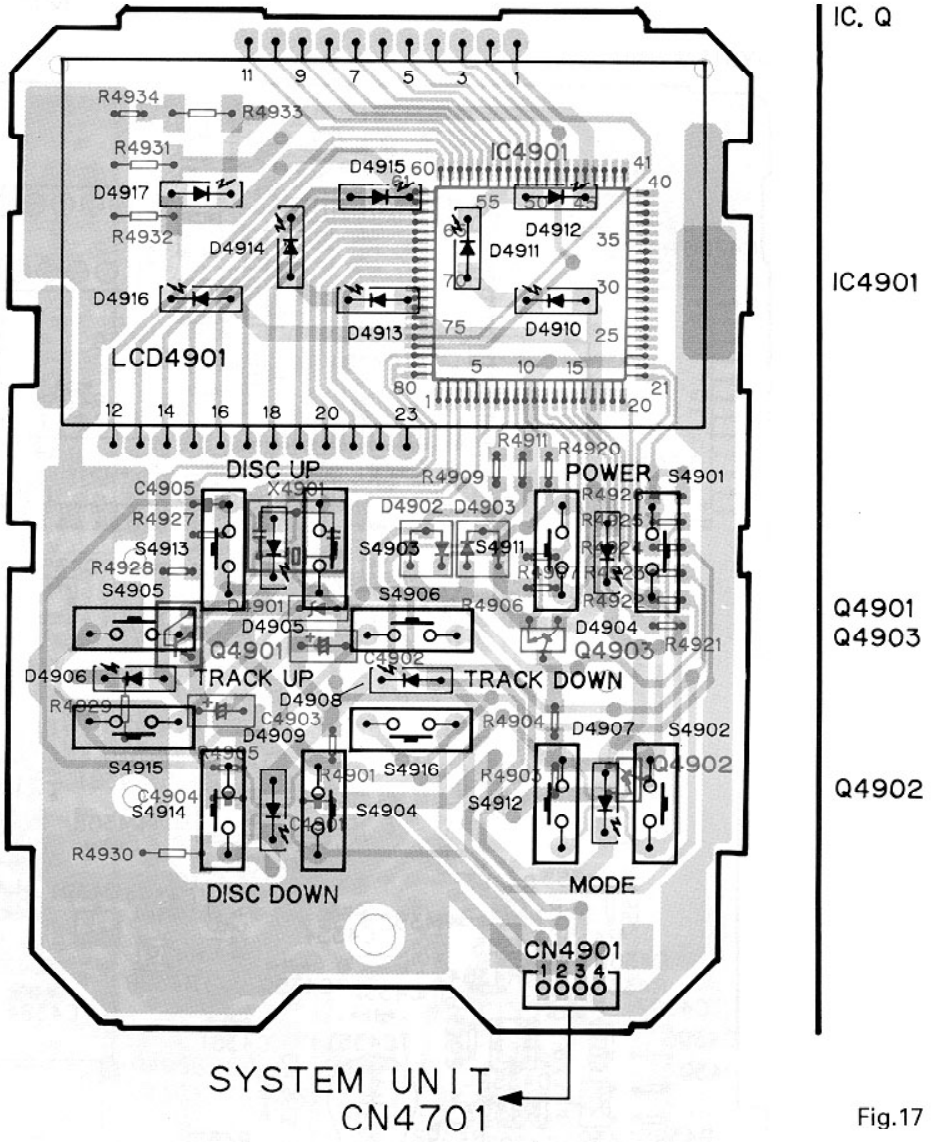


Fig.17

NOTE:

The parts mounted on this PCB include all necessary parts for several destinations.
For further information for respective destinations, be sure to check with the schematic diagram.

12. EXPLODED VIEW AND PARTS LIST

12.1 MAGAZINE ASSY

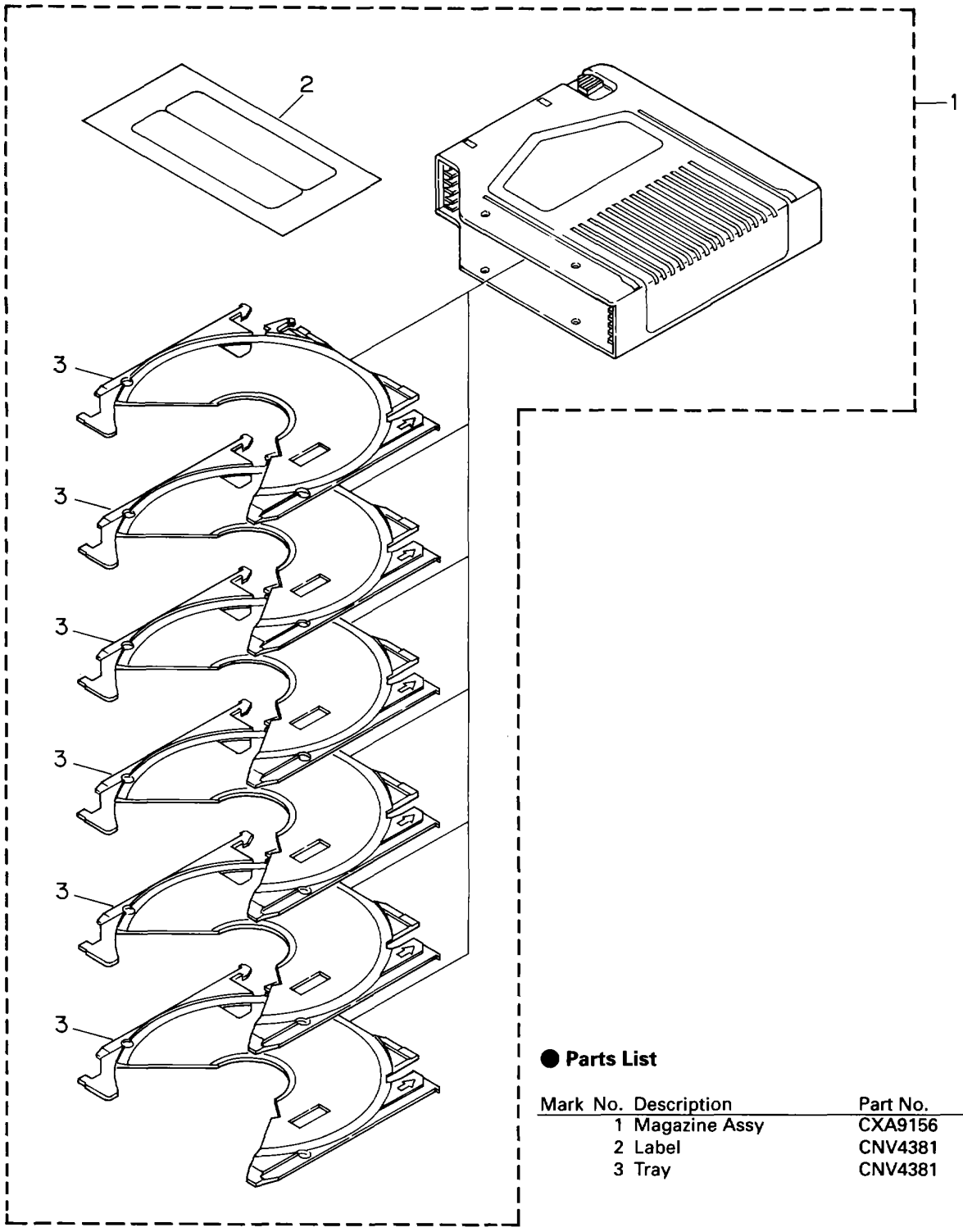


Fig.18

● **Parts List**

Mark	No.	Description	Part No.
	1	Magazine Assy	CXA9156
	2	Label	CNV4381
	3	Tray	CNV4381

12.2 CHASSIS

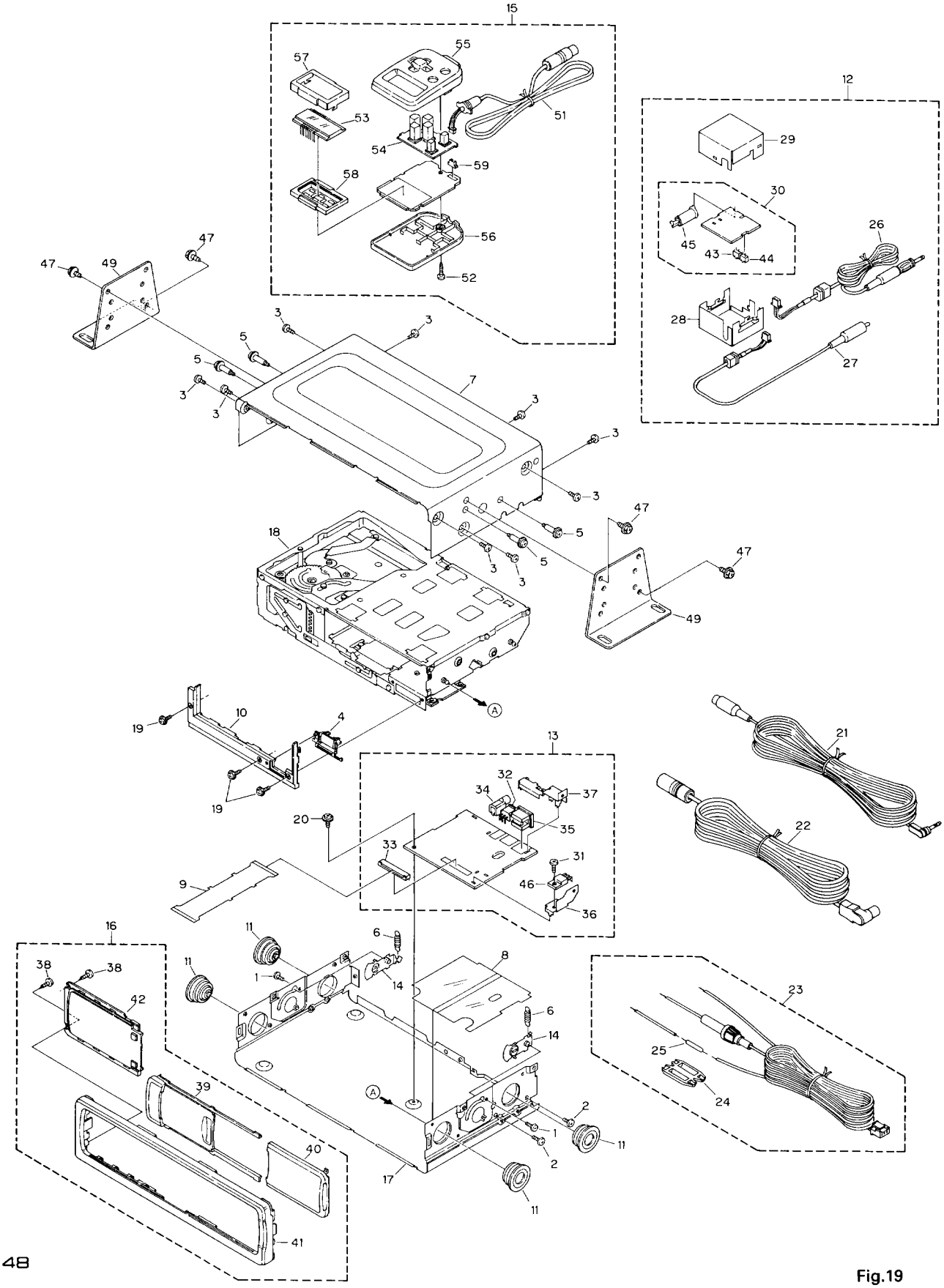


Fig.19

NOTE:

● Parts marked by "＊"are generally unavailable because they are not in our Master Spare Parts List.

● Parts List

Mark No.	Description	Part No.
1	Screw	BMZ20P040FMC
2	Screw	BMZ26P040FMC
3	Screw	BMZ30P040FZK
4	Button	CAC4632
5	Screw	CBA1352
6	Spring	CBH1859
7	Upper Case	CNB2078
8	Insulator	CNM4640
9	P.C.Board	CNP4402
10	Panel	CNS3867
11	Damper	CNV4501
12	Antenna Select Assy	CWM4331
13	System Unit	CWX1960
14	Arm Unit	CXA8606
15	Display Assy	CXA7558
16	Grille Assy	CXA9296
17	Lower Case Unit	CXA9322
18	CD Mechanism Module(C5)	CXK4400
19	Screw	IMS20P040FZK
20	Screw	IMS26P040FMC
21	Cord	CDE4289
22	Cord	CDE5008
23	Cord	CDE5124
24	Cap	CNS1472
25	Resistor	RS1/2P102JL
26	Cord	CDE4087
27	Antenna Cable	CDH1207
28	Chassis	CNA1555
29	Case	CNB1764
30	Antenna Select Unit	CWX1782

Mark No.	Description	Part No.
31	Screw	BMZ26P060FMC
32	Plug(CN4951)	CKS-460
33	Connector(CN4301)	CKS2233
34	Jack(CN4351)	CKS2310
35	Connector(CN4701)	CKS3195
36	Holder	CNC6313
37	Holder	CNC6339
38	Screw	BPZ26P080FMC
39	Door	CAT1812
40	Door	CAT1777
41	Grille	CNS3865
42	Panel	CNS4111
43	Plug(CN4503)(White)	CKS1222
44	Plug(CN4502)(Red)	CKS2812
45	Antenna Jack(CN4504)	CKX1006
46	Transistor(Q4951)	2SD2396
47	Screw	HMF40P080FZK
48	•••••	
49	Angle	CNB2019
50	•••••	
51	Cord	CDE4478
52	Screw	BPZ26P100FZK
53	LCD(LCD4901)	CAW1274
54	Button	CZA3245
55	Upper Case	CZN6315
56	Lower Case	CZN6317
57	Bracket	CZN6250
58	Holder	CZN6251
59	Connector(CN4901)	CKS3126

· The CDX-FM623S/ES and CDX-FM623S/GB Parts Lists enumerate the parts which differ from those enumerated in the CDX-FM629S/UC Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly.

Mark No.	Description	CDX-FM623S/UC Part No.	CDX-FM623S/ES Part No.	CDX-FM623S/GB Part No.
13	System Unit	CWX1960	CWX1960	CWX2005
15	Display Assy	CXA7558	CXA7558	CXA9426
23	Cord	CDE5124	CDE5124	CDE5125
55	Upper Case	CZN6315	CZN6315	CZN6423
56	Lower Case	CZN6317	CZN6316	CZN6427

12.3 CD MECHANISM MODULE

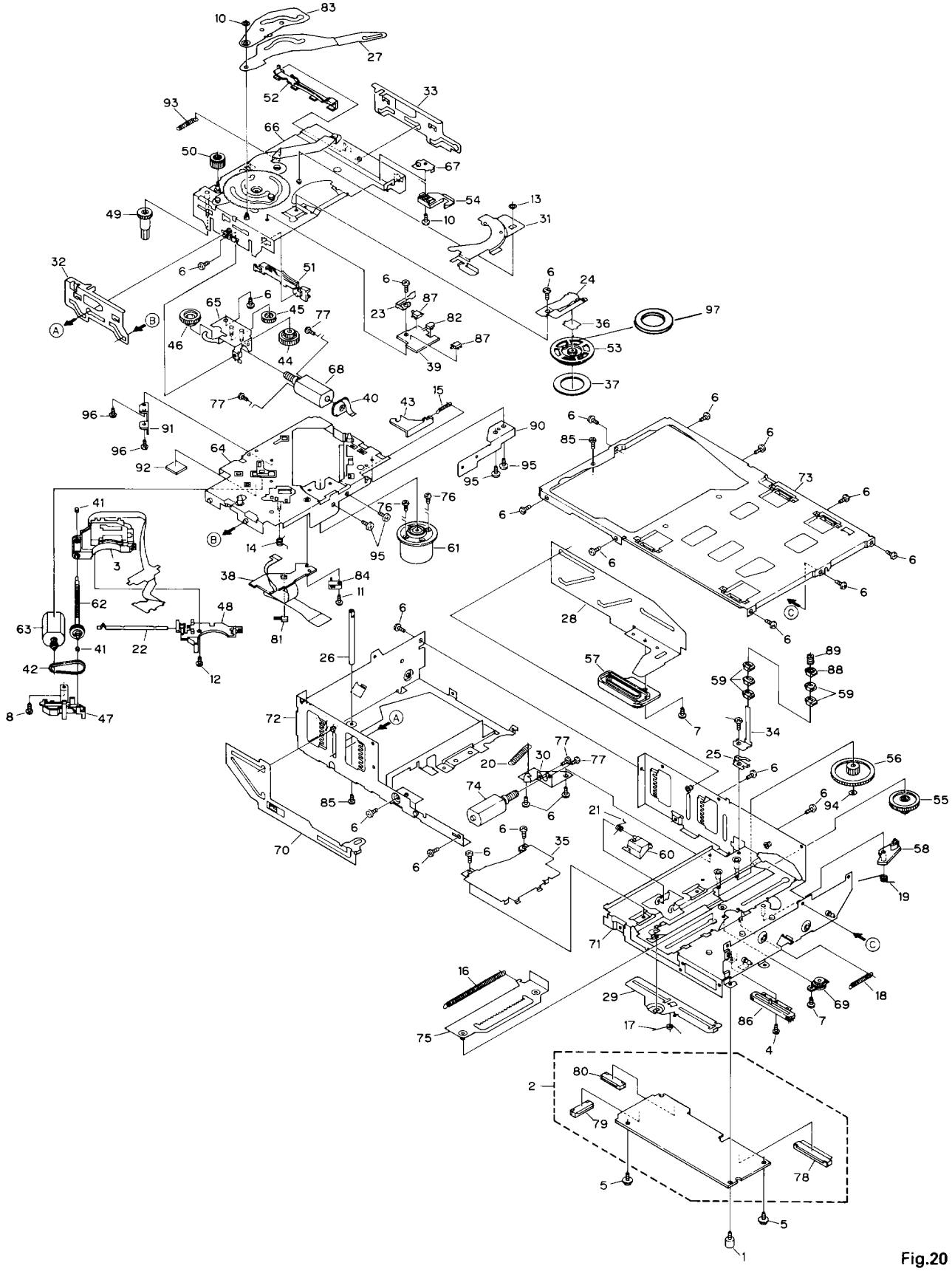


Fig.20

● Parts List

Mark	No.	Description	Part No.
	1	Screw	CBA1369
	2	CD Core Unit	CWX1943
	3	Pickup Unit(Service)	CXX1235
	4	Screw	JFZ17P020FNI
	5	Screw	IMS26P040FMC
	6	Screw(M2×2.5)	CBA1037
	7	Screw(M2×2.5)	CBA1077
	8	Screw(M2×2.5)	CBA1085
	9	Screw(M2×6)	CBA1166
	10	Screw(M2×4)	CBA1176
	11	Screw(M2×6)	CBA1229
	12	Screw(M2×4)	CBA1362
	13	Washer	CBF1002
	14	Spring	CBH1822
	15	Spring	CBH1944
	16	Spring	CBH1826
	17	Spring	CBH1827
	18	Spring	CBH1828
	19	Spring	CBH1829
	20	Spring	CBH1830
	21	Spring	CBH1919
	22	Spring	CBL1241
	23	Spring	CBL1242
	24	Spring	CBL1249
	25	Spring	CBL1295
	26	Shaft	CLA2803
	27	Arm	CNC6181
	28	Lever	CNC6191
	29	Lever	CNC6194
	30	Bracket	CNC6292
	31	Lever	CNC6534
	32	Lever	CNC6535
	33	Lever	CNC6536
	34	Holder	CNC6538
	35	Cover	CNC6657
	36	Spacer	CNM4879
	37	Sheet	CNM4932
	38	P.C.Board	CNP4205
*	39	P.C.Board	CNP4537
	40	P.C.Board	CNP4382
	41	Bearing	CNR1423
	42	Belt	CNT1071
	43	Plate	CNV4761
	44	Gear	CNV4403
	45	Gear	CNV4404
	46	Gear	CNV4406
	47	Cover	CNV4411
	48	Holder	CNV4412
	49	Gear	CNV4416
	50	Gear	CNV4417

Mark	No.	Description	Part No.
	51	Rail(White)	CNV4419
	52	Rail(Black)	CNV4420
	53	Clamper	CNV4421
	54	Lever	CNV4422
	55	Gear	CNV4423
	56	Gear	CNV4424
	57	Rack	CNV4425
	58	Arm	CNV4426
	59	Guide	CNV4597
	60	Arm	CNV4670
	61	Motor Unit(C5)(M851)(Spindle)	CXA9371
	62	Screw Unit	CXA9130
	63	Motor Unit(C5)(M854)(Carriage)	CXA9131
	64	Chassis Unit	CXA9133
	65	Bracket Unit	CXA9134
	66	Chassis Unit	CXA9137
	67	Plate Unit	CXA9138
	68	Motor Unit(C5)(M853)(Tray)	CXA9139
	69	Damper Unit	CXA7714
	70	Lever Unit	CXA9141
	71	Magazine Holder Unit	CXA9143
	72	Frame Unit	CXA9144
	73	Frame Unit	CXA9145
	74	Motor Unit(C5)(M852)(ELV)	CXA9146
	75	Lever Unit	CXA9147
	76	Screw	JFZ17P020FNI
	77	Screw	JFZ20P025FNI
	78	Connector(CN701)	CKS1968
	79	Connector(CN801)	CKS3484
	80	Connector(CN101)	CKS3486
	81	Photo-Transistor(Q851)	PT4800
	82	LED(D851)	CN504-2
	83	Arm	CNC6799
	84	Switch(S853)	CSN1012
	85	Screw(M2×3)	CBA1062
	86	Volume(VR801)	CCW1021
	87	Switch(S851,852)	CSN1033
	88	Guide	CNV4722
	89	Spring	CBH1033
	90	Holder	CNC6819
	91	Holder	CNC6827
	92	Sheet	CNM5020
	93	Spring	CBH1931
	94	Washer	CBF1031
	95	Screw(M2×2)	CBA1250
	96	Screw(M2×2)	CBA1250
	97	Plate	CNC6847

13. PACKING METHOD

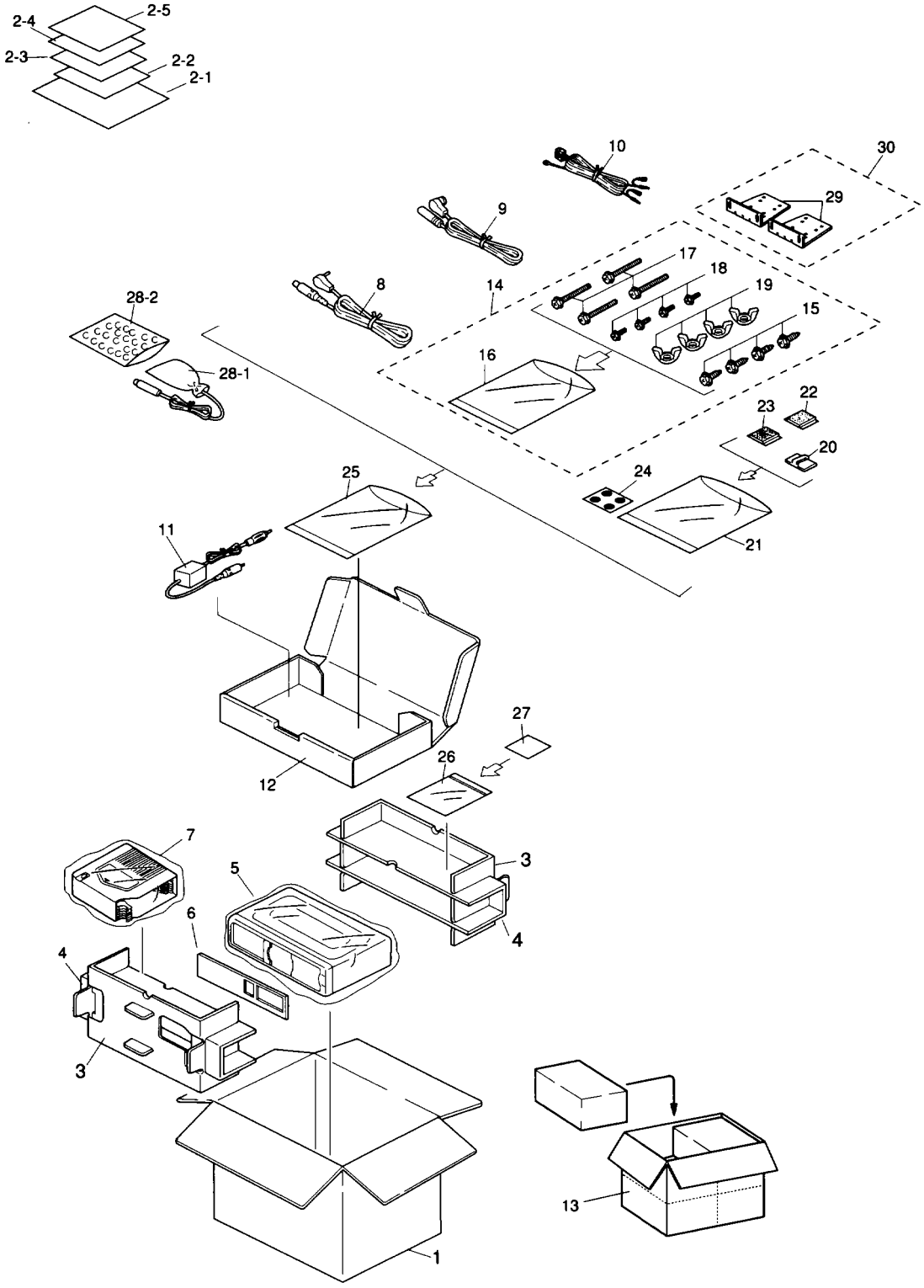


Fig.21

● Parts List

Mark	No.	Description	CDX-FM623S/UC Part No.	CDX-FM623S/ES Part No.	CDX-FM623S/GB Part No.
	1	Carton	CHG3056	CHG3054	CHG3055
	2-1	Owner's Manual	CRD2089	CRD2092	CRB1381
	2-2	Installation Manual	CRD2151	CRD2151	CRD2152
*	2-3	Caution Card	CRP1149	CRP1149	CRP1149
*	2-4	Card	ARY1048	•••••	•••••
*	2-5	Warranty Card	•••••	•••••	CRY1087
	3	Protector	CHP1820	CHP1820	CHP1820
	4	Protector	CHP1817	CHP1817	CHP1817
	5	Polyethylene Bag	CEG1185	CEG1042	CEG1042
	6	Spacer	CHW1528	CHW1528	CHW1528
	7	Magazine Assy	CXA9156	CXA9156	CXA9156
	8	Cord	CDE4289	CDE4289	CDE4289
	9	Cord	CDE5008	CDE5008	CDE5008
	10	Cord	CDE5124	CDE5124	CDE5125
	11	Antenna Select Assy	CWM4331	CWM4331	CWM4331
	12	Sub Carton	CHG3060	CHG3058	CHG3059
	13	Contain Box	CHL3056	CHL3054	CHL3055
	14	Screw Assy	CEA1962	CEA1962	CEA1962
	15	Screw	CBA1295	CBA1295	CBA1295
*	16	Polyethylene Sheet	CNM4338	CNM4338	CNM4338
	17	Screw	HMB60P500FMC	HMB60P500FMC	HMB60P500FMC
	18	Screw	HMF40P080FZK	HMF40P080FZK	HMF40P080FZK
	19	Nut	NF60FMC	NF60FMC	NF60FMC
	20	Clamper	CEF1010	CEF1010	CEF1010
*	21	Polyethylene Bag	CEG-158	CEG-158	CEG-158
	22	Fastener(Rough)	CNM1716	CNM1716	CNM1716
	23	Fastener(Soft)	CNM1717	CNM1717	CNM1717
	24	Seal	CNM4918	CNM4918	CNM4918
*	25	Polyethylene Bag	E36-622	E36-622	E36-622
*	26	Polyethylene Bag	CEG1099	CEG1099	CEG1099
*	27	Caution Card	CRP1090	CRP1090	CRP1090
	28-1	Cover	CEG1062	CEG1062	CEG1062
	28-2	Air Cushioned Bag	CZE2046	CZE2046	CZE2046
	29	Angle	CNB2019	CNB2019	CNB2019
	30	Angle Assy	CXA9655	CXA9655	CXA9655

● Owner's Manual

Model	Part No.	Language
CDX-FM623S/UC	CRD2089	English, French
CDX-FM623S/ES	CRD2092	English, Spanish, Portuguese, Arabic
CDX-FM623S/GB	CRB1381	English

● Installation Manual

Model	Part No.	Language
CDX-FM623S/UC, CDX-FM623S/ES	CRD2151	English, Spanish, Portuguese, Arabic
CDX-FM623S/GB	CRD2152	English, French